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JPRS Report

Environmental Issues

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JPRS-TEN-92-016 3 September 1992

CONTENTS

CAMBODIA

INDONESIA

JAPAN

NORTH KOREA

SOUTH KOREA

LAOS

MALAYSIA

TAIWAN

THAILAND

EAST EUROPE

BULGARIA

CZECHOSLOVAKIA

INDIA

ISRAEL

SAUDI ARABIA

CENTRAL EURASIA

REGIONAL AFFAIRS

RUSSIA

WESTERN REGION

CAUCASUS/CENTRAL ASIA

WEST EUROPE

DENMARK

FINLAND

GERMANY

NORWAY

SPAIN

TURKEY

UNITED KINGDOM

Space Platforms Offer Unique Eye on Global Pollution

92WN0677A Moscow ROSSIYSKAYA GAZETA in Russian 22 Jul 92 p 5

[Article by Mikhail Rebrov: "An Ecological Patrol of the Planet"]

[Text] **Satellites and orbital stations warn earthdwellers of danger.**

"I see land!," shouted the lookout on Columbus's sailing ships when a narrow strip of land, which promised to be the completion of a very difficult voyage, appeared on the horizon.

"I see the Earth....How beautiful it is!" These were the words of Yuriy Gagarin—the first man to see his native planet from outside it. Seemingly immense (the first trip around the world took three years), it was revealed to him from orbit in about an hour and a half. Light blue, inimitable, unique....

In recent years we have often heard the word "ecology," but one can hardly assert that everyone understands the very same thing by it. Scientists of the whole planet argue about what meaning should be attached to this concept. However, while the "terminological" dispute is going on, the state of affairs on our earthly home is worsening catastrophically. I do not want to be a prophet who predicts a "biological apocalypse," let each person interpret for himself the figures cited below.

All life on our planet is supported by the three "whales." These are earth, water, and air. The earth feeds us, but each year we lose almost 60,000 square kilometers of land, which becomes unsuitable for "production."

In order to increase the area of arable land, forests are being chopped down ruthlessly (at the rate of about 110,000 square kilometers per year, or 20 hectares per minute!), often without economic or ecological justification, and indeed they are the planet's only lungs, which generate oxygen, a basic component necessary for all living things.

Each day thousands and thousands of tons of carbon dioxide, nitrous oxides, sulfur, and other harmful substances are discharged into the atmosphere. And we breathe all of them. Scientists estimate that today only 10 percent of the carbon dioxide discharged into the atmosphere can be absorbed by plant life.

The planet is becoming bald catastrophically. Fires and people are depriving the Earth of that which counters droughts, floods, and the erosion and salination of soils.

Civilization conflicts with nature. People's activity that is connected with mining and construction work leads to the displacement of vast amounts of various rocks and soils, which is commensurate with the "washing away" activity of the rivers. And it is enormous! Today's volume of rock and soil that is moved is comparable in scale with geological processes. It has been estimated that four percent of the land is under urban and rural structures and various types of communications and service lines, mines, quarries, and artificial bodies of water. By the year 2000 this figure will grow to 15.

At present there is every reason to assert that living nature, in the expression of Academician N.N. Moiseyev, is in a state of "local ecological stresses." The water of 75 percent of the rivers, lakes, and small and large bodies of water even today are unsuitable for drinking. The pollution of the world ocean has reached an immense scale: more than 30,000 different types of chemical substances with a total volume of 1.2 billion tons and up to 6 million tons of petroleum are poured into it annually. What kind of figures are these?

According to UN assessments, each year from 13 to 18 million people die on Earth; three quarters of them are children, the most unprotected portion of mankind. One billion people are suffering from a lack of food. Up to 35 percent of the population in industrial regions is susceptible to immunodeficiency, and up to 20 percent suffer from allergies. Each day 25,000 people die because of bad water.

Twenty years ago, one type of animal disappeared from the face of the planet each year; nowadays, according to the data of the World Fund for Protecting Living Nature, this phenomenon occurs at the rate of one type per hour. Rhinoceroses and microorganisms, elephants and plant life, birds and fish, are disappearing. In our country alone, damage from pollution to the environment is assessed at 10 billion rubles each year. Matters are no better in other countries.

The Earth today is close to being made unsuitable for the best of its inhabitants, for the effects of mankind on nature have exceeded considerably the natural environment's capacity to withstand them. The forces are not equal....

Who is guilty? The question is rhetorical. Everyone who lives in humanity's house is responsible for it. And although UN experts assert that the greatest sinner is the U.S. (it puts more than 17 percent of all the greenhouse gases—about a billion tons—into the atmosphere annually), we are in second place. Each year we have 700 major breaks in oil and gas pipelines, and in so doing 7 to 20 percent of all the recovered crude—tens of millions of tons are lost. Dramatic problems arise also in other areas—in Japan, Germany, China, India, and Brazil.

Nature recognizes no state borders. Acid rain from Western Europe goes to Eastern Europe, there is one world ocean for all, and the same is true of the atmosphere. The echoes of ecological catastrophes resound over the entire globe.

The accident at the AES is one more serious warning. Areas of persistent radioactive pollution appeared for the first time in the 1950's, at nuclear-weapons test sites, and in 1986, as a result of the Chernobyl tragedy, the

area with high levels of pollution from cesium came to about 10,000 square kilometers.

Our ancient planet has seen many wars. In the last five and a half thousand years there have been 14,500, an average of two to three per year. So many fires have burned, so much has been destroyed, so much blood has been poured! However, the victory of reason still has not arrived. It is estimated that right now the share of the amount of nuclear weaponry of each person living on the planet is more than three tons of trinitrotoluol. Three tons stored up for the death of each person, including old men and infants.

How did we come to such a point? The fate of the "cradle of civilization" threatens to be turned into a trash heap, a sewage pit for five continents!

The price that mankind has to pay for its irrationality is high. Scientists consider that the fight against environmental pollution can reach 10 percent of all capital investment. But, if the economy as a whole is taken, then in the final analysis, all the expenditures will be recouped. Economic development cannot be evaluated just by the amount of the gross national product. One should judge it primarily by increase in the welfare and improvement of people's living conditions.

Such are the facts. More precisely, just part of them. One could continue to cite the depressing figures. Unfortunately, all of them will confirm the thought of the well-known scientist V.I. Vernadsky: "The face of the Earth is being changed, primeval nature has disappeared."

In our 20th century, the space age, the Earth has come to resemble an enormous spaceship which is tearing along within the expanse of the Universe. The comparison is not without its logic. We know the parameters of our "ship's" orbit, the period of its rotation, the velocity of its motion with sufficient precision—and the number of people aboard this "ship." It has reliable protection from solar radiation, space radiation, and meteor streams in the form of the multikilometer layer of the atmosphere and a "magnetic spacesuit." This system of life support is extremely rational, perfect, and reliable.

One cannot say that our space journey proceeds easily, without any anxieties and complications. It happens that the crew feels the drops in pressure and temperature and suffers from drought or excessive humidity, shocks occur (each hour an average of 10 fairly strong earthquakes occur on the planet), and there are collisions with cosmic "wanderers" (we recall the Tunguska catastrophe)....

There is an old Latin dictum: "Primum non pocere." In translation it means, "Above all, do no harm." An ancient precept. But even today we do not have the right to neglect the Earth—our house, our abode. The strictest monitoring of its condition, of the "three whales" on which all living things rely, is a guarantee for staving off global catastrophe. And here we cannot get along without space technology. Only it allows the Earth to be viewed as a whole, each of its "nooks" to be looked at for a short time, such observation to be made constantly, and signals of damage to be given simultaneously. In brief, create a reliable space ecological patrol by means of satellites and orbiting stations.

The years of the space age not only have confirmed the practicality of such a thought, but it has also enabled interesting experience to be gained. Data about natural land formations and the status of the surface of the seas, oceans, and atmosphere will be gathered in outer space by remote sounding methods. In order to obtain the needed information, photographic and television systems installed aboard spacecraft will be used. Photographic data collected will be transmitted periodically as surveys of various regions of the planet are completed; the television equipment can transmit data to surface receiving stations in a direct transmission mode, that is, when passing over certain parts of land or the oceans. Moreover, satellites will carry recording equipment for accumulating data and "harvesting" them when they pass over the receiving station.

Space patrols are capable of supplying information not only about the part of the Earth in daylight, which will be recorded by television cameras in the visible portion of the spectrum, but also about the parts that are in darkness. They will give the thermal characteristics of the locality filmed, that is, an image of natural formations obtained in the infrared portion of the spectrum, as well as the radiation characteristics (thermal irradiation of the Earth's surface and of clouds in various portions of the spectrum). These types of information can be obtained by day or by night.

Space equipment is capable of recording forest fires, changes in soil erosion, the shifting borders of the deserts, the purity of water bodies, harmful discharges into the atmosphere by industrial giants, and the smoke-blanketing of areas above large cities.

Certain consequences of air pollution—areas of polluted snow, zones of destruction of plant life, and so on—can be determined by means of space photography. The installation of laser and other special apparatus aboard satellites and orbital stations for remote sensing of the atmosphere will enable not only the borders of polluted zones but also the composition and concentration of atmospheric impurities to be determined.

So-called sozological maps, that is, maps of environmental pollution that indicate the various types of sources of ecological damage, are created by the use of space equipment. Sozological maps will enable industry to be planned and developed on a scientific basis, production facilities to be sited in such a way that they will not harm nature, and hotbeds of ecological violations to be monitored.

Only highly developed countries, primarily Russia, the United States, France, and Japan, are in a position today to conduct ecological patrolling from outer space....However this problem has for a long time now gone beyond

the scope of narrow national development. Close scientific and technical collaboration under the aegis of the UN, coordination of the work, and the joint financing of large-scale projects are necessary. About seven types of space systems are already operating for ecological purposes in the world. Russia has at its disposal an arsenal of resources. These are the Kosmos, Meteor, and Resurs-O series of satellites and the Mir orbiting complex. Both these types of craft and their equipment are being perfected for the purpose of getting "portraits" of the earth as specialized as possible for scientists who are studying narrow specialties and simultaneously obtaining an overall map of the changing face of our planet. Tomorrow's equipment will enable us to evaluate the chemical parameters of the atmosphere and of the waters over the entire globe, and to transmit this information in real time to thousands and thousands of recipients on all continents.

Let us sum up the results. The progress of historical development has passed to society and to each person on Earth the need to cultivate thought that will embrace problems of the planet as a whole. Cosmonautics has opened up fundamentally new opportunities for us. Figuratively speaking, it has given the Earth's inhabitants a chance. It is not only necessary, it is also advantageous, to make use of them. In all of their relationships.

The UN Conference on the Environment and Development was held in Brazil in June this year. One hundred seventy-six countries took part in this international forum. It concerned many worrisome problems and symptoms about the future of the planet for people and about the fact that these problems must be solved on Earth and in space, and they must be solved rationally and urgently. Time is wasting, time calls for a multiplication of efforts, and time gives us warning.

On the threshold of the third millennium, it is time to understand that we, the Earth's inhabitants, comprise a single family of peoples with common interests and a common fate, that our planet is marvelous and unique, that it is vulnerable and fragile, and that nature is severe and always exacts its penalty, which at times is severe.

REGIONAL AFFAIRS

European Firm Argues for Tropical Forest Exploitation

92WN0664B Paris JEUNE AFRIQUE ECONOMIE in French Jun 92 pp 36-37

[Article by Thierry Vincent: "Isoroy Counterattacks"]

[Text] As the years have passed, deforestation has become a very popular topic in the media. Those who exploit the forests—those who deal in and process tropical woods—are held primarily responsible for the degradation of these natural assets of the land. In some industrialized countries where there is a strong ecological awareness, it is already boycott time. In Germany, sales of exotic woods have already dropped 30 percent in three years. In Austria, there are quite simply no more buyers.

Tropical Woods: A Commodity Very Much in Demand

As the only remaining European firm that still harvests and processes African woods on a large scale, the Isoroy company—a subsidiary of the French Pinault group—still believes, despite everything, that this activity has a future. "We are faced with an insoluble paradox," says Alain Audebert, who heads the structural panels division. "While on the one hand," he explains, "the worldwide demand for exotic woods is in a period of accelerated growth, the fear—sometimes justified—that the forest resources of the planet will be depleted exercises a considerable restraint on the development of this sector."

Because of their resistance, tropical woods are a commodity that is very much in demand for the manufacture of plywood panels. The markets are many: they are used in TGV [high-speed train] floors, truck bodies, methane tankers, and pleasure boats, as well as the do-it-yourself market among the general public. With annual sales on the order of 800 million FF [French francs], these plywood panels account for one-third of Isoroy's revenues (2.4 billion FF) and represent a production of only 150,000 cubic meters, or 15 percent of Isoroy's total production. Plywood made of exotic woods has proved to be an upscale product with a high added value. The Isoroy company is particularly anxious to defend this activity.

To be sure, there are possible substitutes for the African woods used by Isoroy (98 percent of which is okoume [gaboon] that comes from Gabon through the medium of Isoroy's local subsidiary, Leroy Gabon). The conifers grown in the countries of the North can also be used to make plywood, but they are distinctly less profitable: their "wood-yield" (the volume of wood actually used in the manufacture of a panel expressed as a percentage of the original volume) is only 35 percent for the conifers compared to 50 percent for plywood panels made from the exotic woods. As for beechwood and birchwood, they cost twice as much, and the wood-yield does not exceed 30 percent.

Faced with the pressures from the environmental protectionists, Isoroy decided to counterattack on its adversaries' own terrain. Damaging the forest is out of the question, and Isoroy is coopting some ecological concerns. This has given rise to an all-out media campaign advocating the "proper" exploitation of the African forest: trips by journalists to Gabon, with a visit to the forestry concessions of the Leroy Gabon subsidiary; lobbying the media and the certification organizations, such as the Wood Technical Center (CTB) in France; and the creation of a green brand name, "Eurokoume."

"We are suffering the consequences of a terrible confusion on the part of consumers," Alain Audebert explains. "The consumers are making no distinction between those equatorial forests that are facing extinction and are overexploited—such as the Amazon and Indonesian forests—and those that are exploited in a rational manner." At Isoroy they say that the problem of deforestation has not arisen in Gabon, at least not yet. Isoroy insists, for its part, that it fells only one or two okoumes per hectare.

Isoroy Attempts To Use the Ecology Movement for Its Own Profit

To support this statement, Alain Audebert cites Gabon's strict policy in matters of forest protection. "The forest products trade," he says, "is a government monopoly, exercised through the National Gabonese Wood Company (SNBG). Leroy Gabon accordingly sells its wood to SNBG, which then resells it to Isoroy. This makes it possible to have effective control." The Gabonese authorities have limited okoume harvesting to 850,000 cubic meters per year. The SNBG estimates Gabon's forest reserves at 100 million cubic meters, and the critical threshold—beyond which there would be the danger of deforestation—at 1 million cubic meters [per year]. Moreover, Isoroy headquarters argues that the monopoly over the wood trade makes it possible to support wood prices, and this serves as motivation for the rational management of the forest resources. In short, Gabon—with a population of 1 million—is not in danger of having its farmers pillage the forest in order to sell the timber and grow cereal grains in its place. These arguments are also supported by some experts in the field. "The problem of the exhaustion of the Gabonese okoume reserves has not yet arisen," declares an agricultural economist of the Tropical Forest Technical Center (CTFT, a French governmental organ). "On the other hand," he adds, "the situation is critical in some other countries, notably in the Sahel but also in Indonesia, Malaysia, and Brazil."

To counter its competitors in Southeast Asia, Isoroy is therefore attempting to use the ecology movement for its own profit. In substance, Alain Audebert is arguing that countries such as Malaysia and Indonesia do not have

the same scruples as Gabon in respect to forest exploitation. To put it bluntly, the bad reputation of these "woodcutters" reflects on the entire industry.

Indonesia—which in only 10 years has become the number-one exporter of plywood (40 percent of the EEC's imports come from the Indonesian archipelago)—is, in the opinion of Isoroy, an unfair competitor. Unlike its Malaysian neighbor, who is content merely to sell the logs, Indonesia has provided itself with a major wood-processing industry. Lower labor costs, the anarchic exploitation of the forest, a weak dollar, and the failure to recycle the waste products are all factors that serve to lower the price of Indonesian wood, with the result that plywood manufactured in Indonesia can sell for 30 to 40 percent less than plywood made from Gabonese okoume.

Under these conditions, survival of the industry that processes African woods will depend above all on the capability of the processors to exploit the only comparative advantage of which they can still boast: the rational management of forest resources.

African Environmental Problems Explored

92WN0664A Paris JEUNE AFRIQUE ECONOMIE in French Jun 92 pp 228-230

[Article by Dominique Hoeltgen]

[Text] "Ecology? That's the least of our worries." This comment—so often heard in the Bantu, Swahili, Arabic, and other African languages—may possibly be the sign of a mental blindness that could, if it continues, have tragic consequences. Africa is living under the threat of ecological catastrophes.

Following are some of the specifically African problems—and the potential consequences of those problems—that will probably be brought up at Rio de Janeiro:

Climatic Change: The Greenhouse Effect

Dakar and Banjul engulfed by the Atlantic; the Cheops pyramids, Kefren, and Mykerinos swallowed up by the Mediterranean; and Maputo lost in the Indian Ocean: this is not the scenario of a science-fiction film but—unfortunately—a real possibility. Senegal, Gambia, Egypt, and Mozambique are actually in danger of partially disappearing during the next century. Their lands could be swallowed up by the sea. This is one of the probable consequences of the warming of the planet—a phenomenon that in turn is a consequence of the greenhouse effect. During the 21st century the rise in the earth's temperature could induce a rise in the level of the oceans ranging from 50 cm to slightly more than 2 meters. Bangladesh is in danger of disappearing completely. Suriname, Indonesia, Thailand, the Maldives, and Pakistan risk losing much of their land area, as do the four most endangered African countries. Researchers are studying the case of Senegal: they have calculated that with a rise in the water level of 50 cm, coastal erosion would wear away 64 square km of the country's land area and 2,300 square km of land area would be inundated. If the water level rises by 1 meter, the loss of land area would be 6,085 square km. In addition to the disappearance of land area, the mangrove swamp would be inundated and the Diama and Manantali dams threatened by the overflow from the Senegal River. A number of projects are under way or under study to forestall that danger by stabilizing the dunes bordering the ocean and by building levees and other protective works. The causes of the evil, however, are global in scope. Will a consensus be reached in Rio on the action to be carried out? Will the developed and developing countries come to an agreement on the actions necessary to stabilize—indeed, to reduce—the concentrations of gas in the atmosphere?

Desertification

The sands are devouring Nouakchott, every day burying a little more of the Mauritanian capital under a sterile shroud. The acacias and cactaceae planted in recent years to form a "green belt" around the city do not constitute the protective bulwark that had been anticipated.

The same is true of the Algerian green barrier—the screen of trees that began to be planted 20 years ago in a very costly and labor-intensive effort to halt the advance of the Sahara. The desert still occupies four-fifths of Algerian territory. The 1,500 km of plantings made from east to west on the Hauts Plateaux have not produced the same result everywhere. Whereas in some places clumps of trees have sprung up—to the extent that they have even served to create microclimates—in others the threat of the desert persists. The fragile ecological balance has been seriously damaged by flocks of sheep that graze on the roots and by farmers who misuse their tractors by digging furrows too deep. The topsoil is reduced to dust and borne away by the wind. The wind erosion—already a major problem on the Hauts Plateaux—is intensifying.

Cultivated Fields Are Becoming Barren Land

Identical scenes are taking place in Mali, Niger, Chad, the entire Sahel belt, and even the southwestern part of the continent. Uganda, Somalia, Kenya, and Zimbabwe have this year also been afflicted by one of the most severe droughts of the century. Rivers and streams are drying up, cultivated fields are becoming barren land, and the rare oases are being consumed by the sands.

In response to the demographic pressure, the fallow periods are becoming fewer and farther between. If this trend continues, soil erosion threatens to reduce agricultural production by 25 percent between now and the year 2000.

Every year the desert swallows up 60,000 square meters of arable land and pasture. The Sahara—which covers an area of more than 8 million square km—has devoured

more than 500,000 square km in a period of 50 years. The arid regions that surround not only the Sahara but also the Kalahari and Namib deserts are expanding and now impact much of North, West, and Southwest Africa.

Deforestation, Protection of the Forest

Only 20 percent of the original forest remains today in Africa—a fact that is due primarily to clear-cutting, improper maintenance, and insufficient replanting. And, of course, to the change in climate. The case of Ethiopia is one of the most crucial: who will remember that at the beginning of the 20th century the forest covered 40 percent of the territory of that country? Today, the trees cover only 4 percent. Overall, Africa is losing more than 3.8 million hectares of forest every year (a loss that is less than that recorded in South America and in Asia). The Africans are replacing 9.2 percent of the felled trees (slightly more than the Latin Americans, but less than the Asians). By 1980 the continent was already losing approximately 2.3 million hectares of forested regions per year (out of a worldwide loss estimated at 3.8 million hectares).

In view of this statistic, actions were quite properly set in motion. Tanzania will strengthen its institutions that are responsible for managing its forests and savanna woodlands, in the hope of halting the deforestation of certain regions of the country. In Cameroun, some members of Parliament [MP] have set up a program whose objective is to revise the policy of forest exploitation, and to involve foresters in a program for the regeneration of the forest whereby they would plant three trees whenever they cut down one. The goal of the MPs is to increase the existing forested area to 30 million hectares from the present 20 million within 10 years starting in 1992, by encouraging the population to plant 2 billion trees.

Many more similar projects will be needed, so that the African equatorial forest can be reconstituted within 10 years. That is what the most optimistic of the program's supporters are hoping.

Solid Waste and Waste Water

Will the cities of Africa soon be buried under refuse—will Nouakchott, for example, be consumed by its huge garbage dumps that are always overflowing and are never cleared away? This horror film is unfortunately not far from becoming reality. In the developing countries, less than 10 percent of the urban waste is treated in any way at all, and only a small part of this treatment meets acceptable quality standards. The target date set by the members of the Rio conference for the partial eradication of this scourge is the year 2000 for the developing countries. Eight years from now, therefore, 50 percent of the waste water and solid waste in these countries should either be treated or be eliminated. An additional 25 years was allowed for their total elimination. For developing countries, such a program for the elimination of waste requires an annual investment of $15.1 billion, including $2.7 billion for solid waste alone.

Water Pollution

Harare is threatened by a shortage of drinking water. The two lakes that supply Zimbabwe's capital have in fact just been declared disaster areas, primarily because of the dangerous proliferation of water hyacinths in Lake Chivero as a result of the increased pollution. In Bamako, three Malian researchers raised a cry of alarm in April 1992: they said the drinking water obtained from wells contained worm eggs, protozoans, bacteria, and viruses in addition to "pollutants at levels of pollution that are intolerable for human health." This kind of cocktail of poisons is, unfortunately, not the exclusive privilege of the Malian capital. The urban drinking water supply too often suffers from a failure to observe the standards for the construction of septic tanks and from hastily constructed water supply systems.

Moreover, in the countryside the total absence of any such installations has on occasion had dramatic consequences, as for example at Nkenkasu, a Ghanian village 200 km north of Accra where 29 deaths occurred from cholera in early May because the stream from which the villagers were obtaining their drinking water had been polluted by a garbage dump recently established nearby. Water pollution causes 25,000 deaths every day worldwide.

A Colossal Estimate

An estimated $625 billion per year: that is the sum needed to implement environmental protection programs for the developing countries alone. Only 20 percent of these investments ($125 billion) could come in the form of transfers from the countries of the North, which are currently devoting only $52 billion per year for the environment in the South. The experts at the Earth Summit believe the concerned countries will have to come up with their own funds to finance the remainder. There was no answer to the pressing question that emerged from the Rio conference, namely: How can $500 billion be generated to protect the trees, lands, water, and air when the starving populations must first be fed, and when one-quarter of the 4.2 billion inhabitants of the developing countries live in absolute poverty?

[Box, p 228]

Lukewarm Support and Minimal Commitment

The African ministers of the environment met last 14 November in Abidjan. Here are excerpts from their statements:

"We are emphasizing that our commitment to development and to the protection of the resources and the environment can be carried out in practice only if our countries are able to do so—something that will become reality only if there is effective international solidarity, genuine cooperation, and durable mutual agreement that can last despite the constraints, which are both chronic and circumstantial."

"Poverty in Africa, and the overexploitation of Africa's natural resources, are closely related and must be regarded as some of the principal forces militating against the adoption of effective policies for the rational management of the environment."

"There will have to be profound and resolute changes at the general policy and decisionmaking level so that, on the one hand, the African countries will make management of the environment an integral part of their development planning, and so that North-South and South-South cooperation will be intensified."

Safari '92 Experiment To Measure Savanna Fire Emissions

MB2107142692 Johannesburg SAPA in English 1305 GMT 21 Jul 92

[By Sipke de Vries]

[Text] Johannesburg, July 21 (SAPA)—Veld fires will be ignited from September throughout Southern Africa in one of the most comprehensive international experiments into global pollution the African continent has ever seen. "Veld fires are now known to be an important source of atmospheric pollution. Scientists from the U.S. Space Agency, NASA, Brazil, Britain, Germany, France, Canada, as well as from Southern Africa, are going to set parts of the sub-continent on fire in the spring in a bid to try and find out more," said Dr. Janette Lindesay, deputy-director of the climatology research group at the University of the Witwatersrand.

The research group is participating in Safari '92—the Southern African fire-atmosphere research initiative. Safari '92 has received the backing of politicians throughout the Southern African region. "To monitor the effects of controlled burning in parts of the Kruger Park and Zimbabwe, the scientists will be using orbiting satellites, flying laboratories (planes) and remote ground sensing stations equipped with state-of-the-art analytical instrumentation," Dr. Lindesay said. Burning was also to have taken place in Namibia's Etosha Pan, but this plan had to be abandoned due to the extreme drought conditions in northern Namibia.

The Safari '92 experiment is to investigate the emissions from savanna fires in Southern Africa, their transport across the African Continent, and the relationship between fires and savanna ecology. It also ties in with the Southern Tropical Atlantic Regional Experiment (STARE), a component of the International Global Atmospheric Chemistry (IGAC) programme. "Both programmes contain remote sensing activities which will determine the occurrence of fires in Southern African and South America," Dr. Lindesay said.

Scientists have become concerned since the discovery of significantly elevated ozone concentrations over large parts of the tropics, particularly over the southern tropical Atlantic Ocean between South America and Africa. The hypothesis is that "biomass" burning emissions, and subsequent photochemical processes, may play an important role in atmospheric chemistry over a large region of the earth. However, this area of ozone—where elevated concentrations have been found—is not to be confused with the hole in the stratosphere which lets in ultraviolet radiation from the sun, with its links to skin cancer. At the lower sub-atmospheric levels, ozone is a pollutant.

Dr. Lindesay said this and other recent evidence had suggested that veld burning represented an important disturbance of atmospheric chemistry, comparable in magnitude to the effects of fossil burning. "In other words, it is thought to be making a major contribution to the greenhouse effect that is behind the frightening global warming."

Trace gas emissions from bush fires in South America and Southern Africa had been estimated to account for a quarter of the global source of atmospheric carbon monoxide (CO) and nitrogen oxides (NOs), and a third of anthropogenic non-methane hydrocarbon (NHMC) emissions.

The veld burning in southern Africa is to take place under controlled conditions. The experiment involves input and personnel from the U.S. NASA space agency and environmental agencies, research institutes and universities in the United States, Britain, Germany, France, Canada and Brazil, to Southern African bodies including the Universities of Pretoria, Cape Town, Port Elizabeth, the Witwatersrand and Natal. "In a First World context, it is like South Africa having been awarded the scientific olympics," Dr. Lindesay said.

The bush fires, some modest in size, others covering as much as 5,000 hectares, are due to be ignited at Zimbawe's Victoria Falls between October 6 and 9, while the Kruger Park is scheduled for two large controlled burning experiments between 16 and 25 September with four smaller fires planned for observation in August and another four in September.

The fires will form part of the normal veld management—as during this period the bush would have burned normally—and the effects will be monitored on the ground by 50 scientists, from aerial balloon, DC8 NASA aircraft containing a laboratory, and from two satellites. The NASA flights will come from South America, where similar experiments are taking place, and fly over St Helena and Ascension Islands, criss-crossing Southern Africa as far north as Ndola in Zambia. There will also low level helicopter and light aircraft monitoring flights.

"Veld, bush and forest fires may also influence the acid content of the atmosphere and the photochemical reactions in the plumes of these fires may be responsible for as much as a third of the input of ozone into the lowest layer of the atmosphere," Dr. Lindesay said.

After the Safari '92 campaign, the international teams of scientists, including members of the famous German Max Planck Institute, have agreed on a Southern African

data workshop, probably to be held in Stellenbosch in March or April 1993. This workshop is to be followed by a symposium in Zimbabwe or Namibia to inform interested parties of the findings.

Said Dr. Lindesay: "Presentation of the overall results of this probe to determine exactly what man and natural events such as bush fires are doing to the atmosphere and earth, will be made at an international venue before mid-1994."

GHANA

Plan Targets Coastal Zone Industry Pollution

92WN0671A Accra PEOPLE'S DAILY GRAPHIC in English 14 May 92 pp 1, 8-9

[Article by Adwoa Van-Ess]

[Excerpt] **Industries in the coastal zone of Ghana that have been identified to be contributors to environmental damage will be required to submit regular environmental reviews.**

Furthermore, appropriate penalties will be brought against industrial installations that do not comply with set standards and regulations on waste water discharges, air emissions, and disposal of solid and other wastes.

These are actions to be adopted in the Environmental Action Plan (EAP) in the management and conservation of the country's coastal zone.

The EAP expressed concern about the low management and conservation of the coastal zone which it described as sectoral with limited and scattered data for planning and management.

This situation, it said, is unsatisfactory in the light of the increasing population and economic activity in the zone and the ecological fragility of the zone as a whole.

Under managing the built environment, the EAP said the presence in the environment and the use of hazardous substances for various purposes affect the quality of air, water, soil and ultimately life.

Subsequently, the price the country pays in terms of human health and the quality of the environment could escalate unless vigorous action is taken to control their use.

In view of this, the EPC [Environmental Protection Council] has compiled a national register of potentially toxic chemicals under the national programme on chemical safety to monitor the importation, manufacture, distribution, handling and use of hazardous industrial and agricultural chemicals.

It is also to disseminate information on methods of coping with chemical accidents, among others.

Under the programme, therefore, the EPC screens and approves chemicals to be imported into the country, for industrial and agricultural purposes, among others.

[Passage omitted]

SIERRE LEONE

Officials Tear Down Unauthorized Structures on State Lands

AB1907090292 Paris AFP in English 2347 GMT 18 Jul 92

[Text] Freetown, July 19 (AFP)—Sierra Leonian housing and environment officials tore down several nearly-completed makeshift structures in Freetown Friday [17 July] as part of a crackdown against violators of building and country planning regulations.

One conservation association put the estimated cost of the demolished structures and houses at over 10 million dollars.

Structures demolished included nearly-completed buildings, restaurants, warehouses and inns and taverns.

Hundreds of squatters on state lands were also affected. Workmen driving bulldozers and dump trucks demolished their buildings while hundreds of bystanders carted away the spoils.

Government director of housing and environment Ibrahim N'jai told AFP Saturday that he hoped "the action will send signals not only to violators but others who are contemplating unauthorised development of state lands." He said the demolition process would "give a facelift to the capital." But some environmental groups criticised the move, saying the affected areas had posed "no danger or threat to the environment or the beautification of the city."

SOUTH AFRICA

National Parks Board Restructured

92WN0672A Johannesburg FINANCIAL MAIL in English 12 Jun 92 p 86

[Article by Brendan Ryan; quotation marks as published]

[Text] For years, the National Parks Board was well known for the "gardeners of Eden syndrome" of some of its staff—visitors in the parks were tolerated but not welcomed.

But, with the possibility of a new government that might not be receptive to conservation, and soaring demands on the Budget for health, education and other pressing needs, that attitude will no longer do. The board must

become self-sufficient and that means operating like a business; treating visitors like customers and finding new ways to raise revenue.

In the just over a year since Robbie Robinson took over as chief executive director, the board has moved rapidly in this direction. Head office management has been restructured, slimmed down and decentralised, with line management powers delegated to the various park wardens. The board's corporate culture has been tackled head-on, with Robinson insisting that the organisation become more customer friendly because it will stand or fall on revenues generated by its visitors.

Gate, office and restaurant hours have been revised to suit the visitors, not the staff, while management is involved in an intensive study to see what other attractions can be provided. Four-wheel-drive trails, more hiking trails and guided night drives are being introduced in several parks, while innovations such as camel safaris in the Kalahari are being considered. New ground was broken in April when the board leased the Ngala Lodge and access to 14,000 ha of Kruger to the Conservation Corp, a private game-park operator.

The goal is to eliminate the need for government subsidies. The board got 30.1 percent of its R109.9m in income from government in the year to March 1991, up slightly from the 28.5 percent share of the R87.4m in board income that government contributed the year before. Robinson wants to reverse this trend and make the board self-sufficient in three years.

Kruger National Park has long over-shadowed the board's other parks; boosting the patronage of the 16 lesser-known parks is one of the keys to a balanced budget. In total, the parks cover 3.2 ha, with Kruger accounting for 2m ha. The number of visitors in the year to March 1991 totalled 1.05m, with Kruger attracting about 700,000 of them.

It will be some time before the impact of the sweeping changes can be assessed. "Frankly, it's too soon to comment meaningfully on the changes at the National Parks Board," says Dick Parris, the Natal Parks Board's deputy CE. He says his organisation carried out an exercise that included the decentralisation of management three years ago and is still assessing the effects.

But whatever the outcome, Parris is sceptical of the national board's approach. "I don't think that nature conservation agencies at provincial and national levels should even try to become totally self-funding because of the dangers involved in swinging management's attention to generating funds at the expense of conservation, which is its primary function."

The Natal Parks Board is much more reliant on State funding than is the national board. Subsidies will provide about R69m for the current year to April, while the board will generate only R40m on its own.

Parris says the key to keeping State funding for conservation is to stress to government the enormous benefits to the local and national economies through tourism and other activities generated by the reserves.

The attitude towards conservation of the major black political parties, the ANC [African National Congress], PAC [Pan-Africanist Congress] and Inkatha, is favourable, judging by position papers published in late 1990. The ANC says it is committed to conservation and the rational use of SA's natural resources.

But Robinson is cautious. "I am concerned about the sincerity of all the political parties, including the present National Party government, towards environmental policies. I do not believe that environmental and conservation issues are receiving the serious thought they deserve."

The crux of the issue is the drive for sustainable use of the environment. Nobody has stated this more bluntly than conservationist Ron Thompson who, at an Endangered Wildlife Trust seminar in 1988, said: "Only by adopting the attitude that wild animals are 'products of the land' and not 'sacred cows' to be set upon a pedestal, will many species survive this century, let alone the next one."

Some State conservation bodies, such as the Bophuthatswana National Parks Board, and private companies such as the Conservation Corp, which runs Phinda and Londolozi, have adopted this attitude wholeheartedly. Bophuthatswana allows controlled hunting in its national parks; the Natal Parks Board allows the harvesting of thatching grass, reeds and fish in its reserves; while Conservation Corp MD Dave Varty sets up business in partnership with blacks from local communities to supply as many of the needs of his luxury lodges as possible.

The National Parks Board takes a narrower, more purist approach. Robinson's view is that Kruger and the board's other parks are "core" sanctuaries and will continue to be managed with as little deviation from the natural ecological processes as possible. On the other hand, a wider range of activities can take place outside their borders and in the new contractual national parks being set up, such as the Richtersveld. This means no trophy hunting in Kruger—though game for hunting could be transferred to bordering areas, such as the private reserves. Robinson sees education as the crucial issue in winning over black communities and Kruger, in particular, has embarked on various projects and programmes to reach its immediate neighbours. The board has been heavily supported on its education drive from the Gold Fields Foundation, which has built education centres in a number of parks.

Robinson says steps to get qualified blacks into senior positions in the board are also crucial. Last year, he picked Ben Mokaotle as head of human resources, making him one of the board's "Big Six"—the six

executive directors running the organisation. And the first black warden has been appointed, to manage Zuurberg National Park.

The board has more plans. One is to encourage help from the private sector. Rand Mines Properties recently donated 20,000 ha in the Langkloof Mountains to add to Tsitsikamma National Park.

Next up is the conclusion of agreements between Kruger and the private reserves on its western boundary, which will see the fence between them come down.

Ultimately, the board would also like to see the fence on Kruger's eastern boundary with Mozambique come down. The World Bank is lending U.S.$24m to Mozambique for the initial work on a huge new national park that would be established adjacent to Kruger. It would cover about 4m ha—twice the size of Kruger, which is already the largest national park in Africa.

Robinson also wants to get bank funding for the Kruger-Mozambique superpark and other projects. But this depends on an interim government being in place. To be sure, a giant trans-national reserve is years away, but an organisation that manages thousands of elephants, rhinos and hippos is certainly entitled to think big.

Environmental Monitoring Technology Introduced

92WN0661A Johannesburg ENGINEERING WEEK in English 19 Jun 92 p 3

[Text] An environmental monitoring package specifically designed for South African industry has been introduced by the Earth and Environmental Technology division (EET) of the Atomic Energy Corporation.

Available on a rental basis, the plan caters for the on-going monitoring of by-products of a manufacturing process, including effluents, atmospheric releases, solid wastes, radioactive releases, noise and soil contamination.

Said the EET's Brian Hambleton-Jones: "In the first place it can provide data for an environmental audit. Additionally, it can be used to provide reliable independent information for a company confronted by complaints from surrounding communities."

ZAMBIA

Minister Pledges Anti-Pollution Efforts

92WN0659A Lusaka TIMES OF ZAMBIA in English 15 May 92 p 1

[Text] Minister of Environment and Natural Resources, Mr. Keli Walubita, has vowed to fight all kinds of pollution, including fumes from the mines which are causing chest infections on miners and their families.

Mr. Walubita said he would meet Minister of Mines and Minerals Development Mr. Humphrey Mulemba to work out an arrangement that would reduce air pollution, especially in Mufulira's Kankoyo township.

He had found many people in Kankoyo were suffering from upper respiratory infections.

He said this at Chati Plantation some 35 km north-west of Kalulushi after touring Zambia Forest and Forestry Industries Corporation (Zaffico) sawmill.

He said he had appointed a Zambia council for environmental protection and pollution control to deal with the matter.

"The council's duty would be to control all types of pollution including water, soil, air, sound and any form of environmental degradation."

The minister expressed worry at the wanton destruction of trees in the forest reserves which have been completely run down.

He was surprised at Zambians' courage to settle in reserves and destroy trees indiscriminately.

Charcoal burning was no longer a common man's business. "There are some big brains behind this business which has been highly commercialised," he claimed.

The Forestry Act, was weak because one was made to pay only K 100 if caught with charcoal while laws governing the protection of game were tougher.

He promised to arm forest guards to protect the environment from those bent on degrading it.

Mr. Walubita has been touring the Copperbelt for one week and wound up his visit on Wednesday night when he held a Press briefing.

ZIMBABWE

Government Increases Needed Maize Estimates

MB0508153792 Johannesburg SAPA in English 1356 GMT 5 Aug 92

[Text] Harare, Aug 5 (SAPA)—Zimbabwe has sharply increased its estimates of maize it will have to import as the worst drought in living memory begins to squeeze the country to a degree far worse than authorities first expected.

Zimbabwean Vice-President Simon Muzenda was on Wednesday [5 August] quoted as saying import estimates had been increased by nearly 60 percent to 2.5 million tons.

He said demand was increasing in peasant farming areas—the worst hit sector—while more food was being delivered to these areas after an improvement in the transport system.

According to aid agency officials, the rate of consumption has risen from about 140,000 tons a month in June

to over 180,000 tons in July, while the number of people totally dependent on drought relief has soared from 4.7 million estimated in about April to 6.5 million—nearly 70 percent of the population.

Christian CARE Director Innocent Kaseke told SAPA's correspondent stocks of maize harvested in the rural areas on which people had been relying were now exhausted, as were the wild fruits, tubers and roots used to supplement diets.

With the first rains only expected in November, the dry season is only about half-way through. "The heat and the absence of water has made the situation very serious," he said.

Mr. Muzenda's claim that deliveries to rural areas had increased was "a welcome development" as the drought relief operation had not come close to meeting demand, Mr. Kaseke said.

The Southern African Development Coordination Conference's Food Security Unit in Harare reported in its latest bulletin that of the 3.5 million people registered by the Department of Social Welfare as needing drought relief, only 1.6 million had actually received anything.

The livestock industry has also suddenly found itself in a desperate situation as stockfeed companies this week cut deliveries to ranchers from 75 percent of their normal supplies to 50 percent. Veterinary authorities are expected to announce plans to move 170,000 cattle from drought-stricken areas to regions with better pasture and water.

Finance Minister Bernard Chidzero announced last week the government was spending over R[rand]1,100-million on measures to combat the drought, most of it on maize imports.

Minister Reviews Progress of Family Planning Policy

OW1107115892 Beijing Central People's Radio Network in Mandarin 2230 GMT 10 Jul 92

[Interview with Peng Peiyun, minister in charge of the State Family Planning Commission, by station reporter Lin Ru; from the "News and Press Review" program]

[Text] [Lin Ru] How do you do, Minister Peng? As World Population Day approaches, I would like to ask you to say a few words about the population of the world and China.

[Peng Peiyun] Certainly. The United Nations has designated 11 July as World Population Day to arouse the world's attention to the population issue and to enhance its awareness and understanding of the serious situation in regards to the world's population.

The world's population will reach 5.48 billion during 1992. Even the most optimistic forecast points to an annual addition to the world's population of 97 million in the coming decade. Such a huge number will present considerable problems with regard to the utilization of world resources and protection of the environment. It will also have a great impact on economic development. China is the most populous country in the world. As of the end of 1991, the total population on the Chinese mainland reached 1,158,230,000. In spite of the family planning program, China has registered an annual net population increase of between 15 to 17 million in the past few years—approximately the size of the entire population of Australia.

[Ru] As far as I know, China has nonetheless made remarkable progress in family planning work.

[Peng] China began to implement a family planning program nationwide in the 1970s. Over the last two decades, we have indeed achieved remarkable progress in bringing population growth under control. The nation's birth rate dropped from 33.43 per 1,000 in 1970 to 19.68 per thousand in 1991, and the natural population growth rate dropped from 25.83 per 1,000 to 12.93 per 1,000. On average, a Chinese woman in the 1950s would give birth to 5 to 6 children in her child-bearing years; the comparable figure in 1991 was 2.2. The nation prevented approximately 200 million births during those two decades. By implementing family planning, we have saved huge amounts of funds for the state and society, have greatly relieved a heavy burden that rapid population growth might have imposed on the economy, and have made positive contributions to stabilizing the world population.

First Legal Victory Under New Environmental Laws Reported

OW1607073992 Beijing XINHUA in English 0723 GMT 16 Jul 92

[Text] Guiyang, July 16 (XINHUA)—Qing Xiang, a peasant in the suburbs of Guiyang, the capital of southwestern China's Guizhou Province, took a legal action against a factory and school when his fish fry died because of water pollution.

It followed an investigation by the provincial environmental monitoring center which confirmed that pollutants discharged by the Light Industry Technical School and Guiyang Building Material Plant caused the death of Qing's fry. The Protection Bureau decided that the school and plant should pay damages.

When the parties disputed the finding and damages payment, Qing Xiang took them to court—and won.

Lawyer Yang Guanghui said the victory against pollution in Guiyang city was a notable first under the environmental protection laws.

China has promulgated 12 national laws and over 40 regulations on protection of natural resources and the environment since 1979.

Moreover, local governments have promulgated a further 127 local decrees and 733 administrative regulations against pollution.

"Environmental protection has entered a new stage in China and a sound legal system has provided the reliable basis for pollution control in the country," said Zhang Kunmin, deputy director of the State Environmental Protection Bureau, noting Qing's victory.

Local decrees and regulations play an important role in the implementation of the state laws and regulations on environmental protection. They supplement and regulate state law in keeping with local conditions and special cases. For instance Shanxi Province has worked out regulations on pollution control of the Fenhe River Valley. Shanghai has formulated regulations to protect the city's water source.

Beijing, Chongqing, Hunan, Shandong, Wuhan and other provinces and cities have also worked out rules and procedures for implementation of environmental protection laws and regulations.

Guangdong, Fujian and other coastal areas have formulated environmental management methods for development zones and overseas- funded enterprises while simplfying procedures on importation of overseas funds.

Zhang Kunmin said that environmental protection departments have also improved services. They have made environmental appraisals and planning suggestions for industrial layouts in addition to monitoring and controlling pollution.

"Environmental protection departments will promote coordinated development of the economy and environment," said Zhang. "But, they will never lower their requirement standards for control of pollution."

Ministry Announces Fishing Restrictions

HK2207091592 Beijing CHINA DAILY in English 22 Jul 92 p 3

[By staff reporter: "Fishing Restrictions To Protect Resources"]

[Text] Fishing in Chinese waters will be restricted in a bid to restrain the rampant destruction of resources.

The Ministry of Agriculture has set new rules for marine fishing during the Eighth Five-year Plan period (1991-95) for all Chinese coastal and territorial waters.

A ministry official said devastating fishing methods such as fishing by set nets and trawling will be restricted while no fishing of any kind will be permitted during "no fishing season" and in "no fishing areas".

He said China had seen a sharp increase in fishing vessels and fishing horsepower from 1986 to 1990.

But yields were decreasing and fishing potential dwindling in all offshore waters as aquatic resources have been harmed greatly as a result of unchecked and extravagant fishing.

The number of popular fish such as hairtails, inkfish, the greater croaker and the lesser croaker has shrunk so dramatically the fishing of them has come close to a standstill.

According to the new rules, the nationwide fishing strength in Chinese coastal and territorial waters will be limited to under 10.23 million horsepower of vessels, 1.32 million horsepower more than the end of the Seventh Five-year Plan period (1986-90), said the official with the Bureau of Fishery and Fishing Port Superintendency under the Agricultural Ministry yesterday.

But he did not specify how many vessels this actually meant.

The local governments of all coastal provinces, municipalities, and autonomous regions are responsible for keeping their total marine fishing strength under 10.23 million horsepower before the end of 1995 by legal and economic means and with an education drive.

The registration of fishing vessels and the granting of fishing licences also will strictly abide by concerned fishery laws and regulations.

China drafted its first Fishery Law in 1986 and put it into effect the following year, which spelled an end to 30 years of random fishing.

In the following years, a series of rules, directives and restrictions were issued by the State Council and local governments in order to control over-fishing and to protect offshore aquatic resources.

But results have been negligible because fishermen and local officials paid more attention to output than to the quality of their catches.

Delegation To Explore Resource Reclamation Opportunities

HK2407061892 Beijing CHINA DAILY in English 24 Jul 92 p 2

[By staff reporter Zhang Yuan: "Delegation Seeks Help on Recycling"]

[Text] A senior Chinese delegation will start a two-week long visit to Australia and the Philippines in mid-August to explore opportunities for cooperation in the field of resources reclamation.

The nine-person group, headed by Lu Xusheng, vice minister of the Ministry of Materials and Equipment, will also investigate Australia's resources recycling industry, said Jiang Zhiyun, general manager of the China National Resources Reclamation Corporation, who is also a member of the delegation.

This is the country's latest move to strengthen ties with the outside world, especially the United States, Japan, and Western European states, whose resources recycling ratio is more than 60 percent, which is double that of China.

The move is designed to improve resources recycling technology and speed up resources reclamation in China, a country with one fourth of the world total population but low per capita possession of natural resources, Jiang said.

To promote this drive, the country will encourage foreigners to invest in its resources reclamation industry through setting up joint or cooperative ventures.

The ministry has suggested that relevant State departments draft policies concerning foreign investment in the resources recycling industry that are more preferential than those designed for investment in other industries, Jiang said.

At present, the State permits newly-established domestic resources reclamation firms to enjoy a preferential treatment of 50 percent income tax reduction for three years, Jiang said.

To enable more people to recognize the importance of resources reclamation, the corporation and the China Resources Reclamation Research Institute have jointly produced a three-part TV series, named Resources and Recycling, to introduce the history and present situation of resources reclamation in both foreign countries and China.

The series shows that over the past 40 years China's resources reclamation industry has recycled more than 450 million tons of iron and steel, more than 3 million tons of copper, aluminium, lead and zinc, nearly 3 million tons of plastic, 4 million tons of rubber, and 40 million tons of waste paper.

At present, there are more than 100,000 employees in the industry.

Yet compared to Western countries, the series says, China still lags behind by 10 to 20 years in many fields of resources reclamation, such as the reprocessing and refining of waste metals.

Experts estimate that if the country could recycle the majority of its waste, the resources reclamation industry would be able to save the country 25 billion yuan ($4.54 billion) each year, more than enough to cover its 21.1 billion yuan ($3.83 billion) deficit for 1991.

Environment Agency To Assume Larger Role in Pollution Control

HK2507042092 Beijing CHINA DAILY in English 25 Jul 92 p 1

[By staff reporter Zhu Baoxia: "Agency To Play Bigger Role in Pollution Fight"]

[Text] In a fresh move to control industrial pollution, the National Environmental Protection Agency (NEPA) will now introduce new pollution-control technology itself to grassroots enterprises across China.

The strategy is meant to simplify and accelerate the process of turning research achievements into productive capacity, said Bao Qiang, director in charge of the Science and Technology Department under NEPA.

Up to now, research institutes have sent out their own personnel to introduce new techniques, which is not only time-consuming but often snubbed by firms reluctant to spend money on non-productive renovations.

As a result, the country has made some amazing achievements in recent years—some at world levels—but few have been applied extensively at grassroots enterprises.

According to Bao, the agency is drafting a set of regulations to urge local governments to attach importance to the work.

And it has also organized a national committee to evaluate scientific and technical results in the field.

The committee, composed of over 30 environmental experts from all over the country, will pick some of the best ones and introduce them to factories and plants by channelling them through provincial departments in charge of environmental protection.

NEPA has already chosen 73 from 744 scientific and technical research results as the first group to be introduced. Most of the research projects aim at protecting air and water conditions and disposing of harmful solid refuse that could contaminate the surroundings and affect people's health.

If the techniques are applied in 30 percent of the enterprises involved, Bao said, the amount of waste water discharged each year would be reduced by about 364 million tons or 1.44 percent of the total discharged in 1989.

Besides, some 900,000 tons of steel residue, 212,900 tons of ammonia and 33,300 tons of alkali would be collected and re-utilized every year if the new techniques are used.

There are now more than 200 institutes engaged in scientific and technological research concerning environmental protection and treatment, with more than 16,000 employees.

Government To Join International Convention on Wetlands

OW2507084792 Beijing XINHUA in English 0807 GMT 25 Jul 92

[Text] Beijing, July 25 (XINHUA)—China will become a signatory to the "convention on wetlands of international importance especially as waterfowl habitat", an international treaty for the protection of natural resources, on July 31, 1992.

Wetlands are geographical environments such as marshlands, beaches and lakes, which in many cases are the natural habitat of waterfowl, particularly migratory birds which migrate across borders. The purpose of the convention is to protect waterfowl and wetland resources.

According to an official from the Ministry of Forestry, which co-ordinates wetlands protection in China, 67 countries have signed the international convention which took effect on December 21, 1975. The ministry official said that China has designated the Zhalong Reserve in Heilongjiang Province and Xianghai Reserve in Jilin Provinces, both of which are natural habitats of the red necked crane, as two of the world's important wetlands. In addition, Boyang Lake in Jiangxi Province, eastern Dongting Lake in Hunan Province, the bird island in Qinghai Province and Hainan Province's Dongzhaigang—a major area for mangroves, have also been designated as important wetland areas.

Experts say that China's accession to the convention will help protect the country's rights and interests, in addition to helping expand international cooperation and exchanges regarding wetlands.

BURMA

Government Shifts Policy on Logging Concessions

BK1607012992 Bangkok THE NATION in English 16 Jul 92 p B8

[Text] Burma has switched to bartering, joint ventures and local development to exploit its logging resources, instead of granting outright concessions to Thai companies.

Growing international pressures for environmental protection forced Burma to shift its policy and stop granting concessions to foreign loggers. Santi Wayakhonwichit, chairman and chief executive officer of Santi Forestry Group, which has concessions in Burma, said it is unlikely that Burmese authorities would renew concessions which expire in the near future.

Santi Forestry holds logging concessions along the Burmese border opposite Thailand's Mae Saliang District in Mae Hong Son. Santi said logging activity along the border is likely to be phased out because of international pressures. Burma's gains from the activity are not worth international sanctions, he added.

He said Thai firms are also increasingly reluctant to operate in the border areas which are controlled by ethnic groups, because of safety factors and additional expenditure caused by ethnic rivalry.

Wira Tanchukiat, managing director of TCK Sawmill Co, said the firm's concessions near Santi Forestry's will expire late next year. He agreed that Burma might not extend the concessions once they expire. He said Burma has faced sanctions from international environmental groups and the World Bank on grounds of forest destruction.

The Thai government's policy towards Burma is also an important factor regarding the latter's policy on logging activity. He said there are now only 10 Thai firms engaging in logging in Burma, down from a peak of 24.

However, he said, Burma has already switched to other methods to utilize its resources. For instance, Thai firms could be invited to take part in local development projects or to barter for logs. In this regard, firms will work in inner areas which are under Rangoon's control. So far, two or three firms have started work.

Santi Forestry and TCK Sawmill have formed a joint venture to fell trees along a rail route as part of a local development project. The project is expected to yield 10,000-20,000 tonnes of wood for export to Thailand and other countries.

Thai Sawat Import-Export Co, meanwhile, has bartered palm oil for logs. Burma also has a demand for water pipelines. Sawai Pongthep Rosarat, managing director of Thai Pong Sawmill Co, said Burma has also received proposals for joint logging ventures to replace the concessions. Thai Pong holds logging concessions near Mae Hong Son province.

Sawai said a sharp discrepancy in exchange rates, however, has put Thai firms at a disadvantage. The Burmese government will use the official rate of 70-80 kyat to US$1, whereas the private sector gets only six kyat to the dollar.

CAMBODIA

UNTAC's Akashi Suggests Environmental Policy to National Council

BK2407135792 Phnom Penh SPK in English 1125 GMT 24 Jul 92

[Text] Phnom Penh (SPK) July 24—Yasushi Akashi, chief of the United Nations Transitional Authority in Cambodia [UNTAC], delivered here Thursday a statement to the SNC [Cambodia's Supreme National Council] meeting on management and sustainable exploitation of natural resources in Cambodia.

Following is the full text of the statement:

"At the SNC meeting of 7 May 1992, Mr. Sadry, in my absence, made a statement to the council drawing attention to the issue of the ongoing exploitation of Cambodia's natural resources which, in UNTAC's view, affects the vital interests and future of the people of Cambodia and may have environmental consequences raising serious questions about the reservation of the national patrimony.

"H.R.H. Prince Nordom Sihanouk, head of state and president of the SNC, strongly expressed this view when he pointed out in his message to the world summit on environment in Rio de Janeiro that the uncontrolled logging of forests as well as gem-mining were having disastrous socioeconomic and ecological consequences for the country. Other members of the SNC have also on different occasions expressed concern in this regard.

"On 7 May, the members of the SNC were invited to consider this matter, including the possibility of establishing a mechanism for reviewing the various contracts relating to natural resources. I trust that members of the council have given thought to this question, given its extreme importance.

"Since [words indistinct] ecological issues are involved, it is my view that they must be dealt with in a technical subcommittee before receiving final consideration by the SNC. I accordingly recommend that a technical advisory committee on the management and sustainable exploitation of natural resources be established, and invite herewith the parties of the SNC to nominate members and alternates to the committee, 2 members from the State of Cambodia and 1 member each from the other three parties.

"The committee should attach to it, as required for the conduct of its business, technical specialists in the areas considered, such as environment economists, legal experts, economic geologists, etc., as well as short-term consultants. The assignment of such specialists can be funded by UNDP [UN Development Program], ESCAP [Economic and Social Commission for Asia and Pacific], or other organizations, in response to Program Activity 5.2.4 in the secretary-general's consolidated appeal.

"The above proposal is presented in the same spirit as the other proposals and ideas that I recently put forward in Tokyo, with a view to giving concrete expression to the authority and standing of the SNC.

"The Technical Advisory Committee on the Management and Sustainable Exploitation of Natural Resources should have the following terms of reference:

"—To assess current administrative and commercial practices in the light of the imperative need of achieving sustainable management and use of natural resources in the best interest of the ecology and economy of the country;

"—To collect authoritative and accurate information on all current contracts, leases, or franchises relating to the exploration, production, processing, and marketing of primary natural resources in Cambodia;

"—To examine the environmental impact of such exploration, production and processing;

"—To assess the financial benefits, in terms of tax revenue, lease or franchise charges, derived by Cambodia as a whole from the exploration, production, processing, or marketing of natural resources, taking also into account the relevant world market prices;

"—To review the conclusions reached, in the light of paragraph 9 of the Tokyo proposals, for enhancing the authority of the SNC, and recommend specific measures that should be adopted by the SNC and UNTAC;

"—To make any other recommendations to the SNC and UNTAC that the committee may deem appropriate as a result of its work.

"The director for rehabilitation will convene the meetings of the committee and act as its chairman."

FUNCINPEC Communique Supports Akashi Statement on Environment

BK2807075392 (Clandestine) Voice of the Khmer in Cambodian 0430 GMT 28 Jul 92

["Communique"; date not given—read by announcer]

[Text] At the latest meeting of the Supreme National Council [SNC] held on 23 July, FUNCINPEC [National United Front for an Independent, Neutral, Peaceful, and Cooperative Cambodia] Party stressed the following points:

FUNCINPEC supports the statement of Mr. Yasushi Akashi, head of UNTAC [UN Transitional Authority in Cambodia], on the preservation of the natural resources which is the best measure to avoid ruining our country's forests, ores, and other valuable natural resources.

FUNCINPEC would like to stress to the international community that FUNCINPEC is the first Cambodian political party which has announced a total ban on logging of forests in its controlled zone and has implemented this plan since 26 June 1992.

FUNCINPEC also urges the other Cambodian parties to impose the same ban on logging of forests in the zones under their respective control.

At the latest meeting of the SNC, Prince Norodom Ranariddh, head of the FUNCINPEC Party, proposed that all natural resources in the seas be regarded as a part of Cambodia's national resources. All exploitation of all these natural resources must be placed under the control of the SNC which represents Cambodia's sovereignty during the transitional period.

At the end of the 23 July meeting, His Royal Highness Prince Norodom Sihanouk, Cambodia's head of state and chairman of the SNC, commended FUNCINPEC by regarding FUNCENPEC as the sole party which fully respects Cambodia's national interests and particularly the urgent need to protect the nation's natural resources.

INDONESIA

Minister on ASEAN Unity, Upcoming Nonaligned Movement Summit

BK2107102092 Jakarta ANTARA in English 1000 GMT 21 Jul 92

[Text] Manila, July 21 (Earth Wire-ANTARA)—The Association of Southeast Asian Nation (ASEAN) has succeeded in adopting a common attitude on a number of important issues, particularly the environment, in line with the spirit of the Singapore Declaration 1992, said Foreign Affairs Minister Ali Alatas here on Tuesday.

In his address to the first session of the annual ASEAN Ministerial Meeting (AMM) and Post Ministeral Conference (PMC) with its dialogue partners, Alatas said that ASEAN has also adopted a common attitude in combatting the abuse and trafficking of drugs.

"But the six ASEAN member countries still have to establish cooperation in many fields such as in youth affairs, women's role in development and the development of an ASEAN university," the minister added.

He expressed happiness over the fact that the private sector has been much involved in the process of many ASEAN dialogues.

Alatas underscored the importance of increasing the role of the ASEAN Secretariat General to become the Secretary General of ASEAN with broader mandates.

The minister also touched on the tenth Nonaligned Movement (NAM) summit which will be held in Jakarta from September 1 to 6, which he described as a very important dialogue on the global scale.

"Indonesia believes that the NAM summit is important not only for its members but also for all developing countries because the issue on the involvement of all countries in creating a new world economic order will become one of the topics to be included in the agenda," he said.

Among ASEAN countries, only Indonesia and Malaysia are full members of NAM. Brunei Darussalam is planning to apply for a membership status in the movement.

The summit in Jakarta is expected to be attended by delegates from 104 NAM member countries. At the Jakarta summit, Indonesia will officially chair the movement for a period of three years.

Progress on Ozone Depleting Substances Noted

BK3107082692 Kuala Lumpur BERNAMA in English 0333 GMT 31 Jul 92

[Text] Kuala Lumpur, July 31 (OANA-BERNAMA)—Malaysia has already defined policies and regulations to restrict use of Ozone Depleting Substances (ODS) ahead of the time frame set by the Montreal Protocol, Department of Environment (DOE) Chief Abu Bakar Jaafar said Friday.

Under the protocol to which Malaysia acceded in 1990, the country had a 10-year grace period before it was required to initiate action to reduce ODS, he added.

He was presenting a working paper at a seminar on chlorofluorocarbons (CFC), organised by the Malaysian chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers and the Institution of Engineers, Malaysia (IEM).

ODS like CFCs and halon, used widely in industries, are substances that cause depletion of the ozone layer which screens out harmful rays from the sun.

Abu Bakar said Malaysia did not produce any ODS but imported what it needed, mainly from the developed countries.

JAPAN

Environmental Tax, Assessment System Proposed

OW1707123692 Tokyo KYODO in English 1156 GMT 17 Jul 92

[Text] Tokyo, July 17 (KYODO)—The Environment Agency hammered out a report Friday proposing a tax system for environmental preservation and an environmental assessment system, agency officials said.

The report is the gist of a basic environmental bill the agency plans to submit to an extraordinary Diet session this fall, the officials said.

A division of the agency that is drafting the bill submitted the report to the Central Council for Environmental Pollution Control and the Nature Conservation Council, the officials said.

Based on the report, the two councils will hold hearings next month with the various ministries involved as well as with industry members and hope to finish drafting the bill by the end of September, they said.

The report said it is important to acknowledge the environment's limitations so that future generations can inherit a sound and rich environment.

It also said the introduction of an environmental tax is necessary to cover the cost of using, preserving, and restoring the environment.

The tax would be essential to fully carry out environmental assessment to prevent large-scale development from destroying the environment, the report said.

The report also called on Japanese companies to take the environment into consideration in their overseas activities.

The environmental record of Japanese companies operating overseas has recently been under scrutiny.

One case surrounds a Mitsubishi Kasei Corp. joint venture in Malaysia. On Saturday, a Malaysian court ordered the closure of the joint venture's facility saying it poses a health risk to surrounding villagers by producing radioactive waste.

The case has drawn wide publicity in Japan in what is seen as the first example of a Japanese firm being accused of exporting pollution overseas to poor countries.

The Environment Agency report also called for the government to set specific goals and standards for the nation's environmental measures, such as planned restrictions on the emission of carbon dioxide.

Carbon dioxide is believed to be the major cause for global warming.

MITI To Probe Pollution Measures of Japanese Firms Abroad

OW1307135392 Tokyo KYODO in English 1325 GMT 13 Jul 92

[Text] Tokyo, July 13 (KYODO)—The Ministry of Internationl Trade and Industry (MITI) will launch a probe into the pollution control measures of Japanese firms or their affiliates operating abroad, a top MITI official said Monday.

MITI Vice Minister Yuji Tanahashi told reporters the move is in response to an order issued Saturday by Malaysia's Ipoh High Court to immediately shut a plant operated by Asian Rare Earth Sdn. Bhd. (ARE), which is owned 35 percent by Mitsubishi Kasei Corp.

Mitsubishi Kasei is Japan's leading integrated chemical manufacturer.

The court ruled that radioactive waste left by the are factory in Bukit Merah, 16 kilometers from Ipoh, endangered the health of nearby residents. Ipoh is the capital of Perak State in northwest Malaysia.

The court gave are 14 days to ship all radioactive waste and other toxic chemicals to the company's permanent dump site away from the villages.

Earlier Monday, MITI issued a warning to executives of Mitsubishi Kasei who visited the ministry to report on the ruling.

Tanahashi said it would be "highly regrettable" if the court's finding on the plant's health risk was correct.

MITI officials said they will give specific instructions to Mitsubishi on the Malaysian operation as soon as they receive a copy of the court order.

He said the ministry would immediately call on all Japanese enterprises operating overseas to do whatever they can to prevent pollution.

A MITI survey announced last December found that 261, or 11 percent of 2,483 Japanese manufacturing enterprises surveyed, said their overseas subsidiaries or affiliates faced pollution problems.

Of the total, 158 said their overseas subsidiaries or affiliates had been told by local authorities to take steps to prevent further pollution.

It added that 39 firms said their subsidiaries or affiliates faced complaints from local inhabitants, while nine others said their subsidiaries or affiliates had been sued.

Only 7.5 percent of the enterprises surveyed said they have implemented stronger antipollution measures than those stipulated by local laws and regulations.

However, 62.6 percent of the enterprises polled said they are scrupulously observing the antipollution rules of the countries or territories in which their plants operate.

Another 11.6 percent of the enterprises checked said they had not taken specific measures to curb pollution.

Carbon Dioxide Emission Target Seen as Unrealistic

OW2107135492 Tokyo KYODO in English 1326 GMT 21 Jul 92

[Text] Tokyo, July 21 (KYODO)—Japan could fail to attain its goal of limiting carbon dioxide emissions by the fiscal year 2000 to the levels of fiscal 1990 if energy consumption grows at the current pace, the Agency of Natural Resources and Energy said in an estimate released Tuesday.

The estimate was presented to a meeting Tuesday afternoon of a subcommittee set up by three advisory panels to the trade minister to work out measures to protect the global environment, Ministry of International Trade and Industry [MITI] officials said.

Given the recent rapid increase in energy consumption and the government's projection of 3.5 percent economic growth, Japan's final energy consumption in fiscal 2000 is expected to amount to 421 million kiloliters of crude oil, more than the 391-million-kiloliter target, according to the report.

This being so, carbon dioxide emissions per person in fiscal 2000 are estimated to rise about 15 percent from the 1990 levels.

To limit carbon dioxide emissions at the end of the century to 1990 levels while maintaining energy consumption growth at the current rate, it would be necessary to construct another 35 nuclear power stations with a capacity of 1.35 million kilowatts each, which will cost some 15 trillion yen, the estimate said.

Alternatively it would be necessary to plant trees in about 9.3 percent of Japan's total land area, more than the kanto region, to absorb additional carbon dioxide emissions, it showed.

The agency said neither of these measures would be realistic.

The subcommittee, under the Industrial Structure Council, the Advisory Committee for Energy, and the Industrial Technology Council, plans to make some proposals to the panels by this fall after five more rounds of intensive discussion on environmental issues, the MITI officials said.

Among items to be discussed are the relationship between economic growth and conservation of energy and the environment, the effect and impact of energy-saving investment and alternative energy supply, and specific measures to pursue an environmentally harmonized economic society, they said.

The 15-member subcommittee, headed by Tokyo University Professor Yoichi Kaya, will also discuss development of relevant technology and international contributions, they said.

Kaya said that to preserve the environment and energy while attaining the government's projection of 3.5 percent economic growth could be a dilemma.

Not only technological development but changes in people's attitudes toward their lifestyles and toward saving energy would be essential, he said.

Labor, Environmental Issues Forcing Economy To Change

OW2707115492 Tokyo KYODO in English 1007 GMT 27 Jul 92

[Text] Tokyo, July 27 (KYODO)—The Japanese economy, confronted by a chronic labor shortage and growing environmental concerns, needs to be radically overhauled toward the turn of the century, a private-sector think tank said Monday.

The best way to respond to these challenges is to better harness market forces, the Research Institute on the National Economy said in its long-term economic forecast.

The institute said the country's traditional lifetime and seniority-based employment system is under threat from the falling birthrate, shorter working hours, and the increasing frequency of job-hopping.

To counter the labor problems, companies need to mobilize their work forces more frequently, utilize elderly and female workers, and activate overseas direct investments, as well as promoting labor-saving policies through technological innovation.

The institute also pointed out that no companies can ignore environmental issues like global warming in their future business activities.

It also proposed the introduction of an environmental tax and other surcharge systems for curbing business activities not in harmony with the spirit of environmental protection.

It concluded that more efficient use of work forces and technological innovation in the future will combine to allow the economy to potentially sustain around 4 percent annual growth toward the year 2000.

NORTH KOREA

Nation Stresses Wildlife, Environment Protection Activities

SK1307153792 Pyongyang KCNA in English 1513 GMT 13 Jul 92

[Text] Pyongyang, July 13 (KCNA)—Korea has conducted brisk activities to protect and propagate animal resources, thus adding new looks to fauna.

According to data available, the species of freshwater fishes in the country reached 185 with the discovery of Wonbong Char and other fishes in the 1980s.

The newly-discovered freshwater fishes have become known to the world after being registered as international standard specimens.

Carp, silver carp, cornet, kinyom and other fishes are teeming in River Taedong which has been converted into a giant artificial lake at its estuary as a result of the construction of the West Sea barrage.

Rare birds are also flocking into Korea.

More than ten species of birds including Japanese night heron have been discovered in recent years. Over 390 species of birds have been listed in the book on Korean birds. There live more than 100 species of animals in Korea. Among them are musk rat and other animals of great value in zoo geography and animals providing precious medicines, fur and meat such as sable, weasel, fox, bear, wild boar, musk deer and deer.

Recent years have seen the appearance of many nature reserves, animal sancturies and sea birds sancturies at spots which are favourable for propagation and areas of chorological importance.

SOUTH KOREA

Pollution-Free Insecticide Developed

SK1507032792 Seoul YONHAP in English 0307 GMT 15 Jul 92

[Text] Seoul, July 15 (YONHAP)—The National Institute of Health (NIH) in South Korea has developed a pollution-free insecticide using bacteria that attack larvae.

With world-wide attention on the environment spawned by the Rio earth summit, development of the highly effective insecticide that poses no ecological harm is hailed here as opening a new stage in insecticide research.

This is not exactly a first, however, since the Pasteur Institute in France had already developed a pollution-free bacterial insecticide. But the practicality of the Pasteur insecticide, labeled IPS-82, is limited by a production cost of almost 30 U.S. dollars a kilogram.

The transmitter insect research team at NIH began searching for bacteria that would serve as natural enemies of insect larvae in July 1989, with the conviction that exterminating insects in the larval stage would be more effective than trying to eliminate them after they became adults.

In three years they collected sample bacteria from 146 parts of the country and isolated the bacillus thuringiensis, which they labeled NE-87 (N for NIH, E for entomology), in a sample from Yoju, Kyonggi Province. After numerous experiments, the team succeeded in developing the insecticide based on the NE-87 bacteria in powder form.

Repeated laboratory tests on artificial rice paddies, ponds, and puddles showed that NE-87 was not toxic to humans or cattle, caused no ecological damage, and insects did not build resistance to the insecticide.

In addition, tests on harmful insects showed that NE-87 killed at least 90 out of a hundred at a strength of 0.0073 ppm (parts per million), while the same results with ips-82 required a 260 percent higher concentration of 0.0192 ppm.

The NE-87 promises not only to bring about a new generation of insecticides, but also to eliminate nearly all types of mosquitoes and other harmful insects, including those in the chilnonidae and sinuliidae families.

There are currently 53 types of mosquitoes, of which between six and seven transmit encephalitis, malaria and other diseases. Culex pipiens molestus can survive the winter in pipes under buildings, but a handful of ne-87 would eliminate the mosquitoes without pollution.

Scattering NE-87 in rice paddies and swamps would completely kill all mosquito larvae in the area, eradicating mosquito-transmitted diseases and helping the agricultural economy by protecting cattle.

An NIH source said NE-87 can be cultivated cheaply from rice straw, corn oil and soybean dregs, at a lower cost than DD-VP, the current lowest-cost chemical insecticide (2,400 won/kg). He projected that NE-87 will dominate the international insecticide market from next year, when a selected firm begins mass production.

DPRK Rejects Meeting on Building 'Peace Park' Inside DMZ

SK2407135392 Seoul CHUNGANG ILBO in Korean 23 Jul 92 p 2

[Text] On 22 July, an ROK Government official revealed that although North and South Korea were scheduled to attend a UN Environment Program [UNEP] conference in Hanoi, Vietnam at the end of August to discuss the establishment of a peace park inside the DMZ of the Korean peninsula, the meeting will not take place as the North has refused to attend.

The official also said: The UNEP initially invited the North and South Korean delegations to the conference to discuss the creation of an Indo-China international nature and environment park, but they extended the invitation to include the discussion of possibly establishing a peace park inside the DMZ of the Korean peninsula. The meeting was scheduled to start in Hanoi on 25 August. The ROK Government was to send a delegation led by Chong Nae-kwon, chief of the Foreign Ministry's Science and Environment Section, but decided not to send its delegation when it heard of North Korea's refusal to attend the meeting.

An agreement on establishing a natural park on 450,000-hectares (approximately 120,000 pyong) on the borders of three Indo-Chinese countries—Vietnam, Cambodia, and Laos—is to be formally signed at the Hannoi conference.

Democratic Liberal Party Creates Environmental Concerns Office

SK2707143092 Seoul YONHAP in English 0854 GMT 27 Jul 92

[Text] Seoul, July 27 (YONHAP)—The Democratic Liberal Party (DLP) joined the spreading environmental protection movement Monday by forming an environmental office headed by Secretary General Kim Yong-ku.

"Our party has led the way already with discarded tissue collection, use of recycled paper, and conservation of energy and other resources," DLP Executive Chairman Kim Yong-sam told a ceremony at the party central office in Yoido.

Kim proposed five major projects—paper conservation, electricity and water conservation, curbing use of disposable products, waste recycling, and change of eating habits.

The DLP will also carry out a clean-up of beaches and public recreation areas by forming environment protection branches and committees at party regional offices across the country, party officials said.

LAOS

Official Views Environmental Effects of Past Forest Destruction

BK2907132892 Vientiane KPL in English 0910 GMT 29 Jul 92

[Text] Vientiane, July 29 (KPL)—The past serious forest destruction is causing changes to environment in the country, said Mr. Noukon Simmavong, director of the Environment Protection Organisation, Ministry of Agriculture and Forestry, in an interview to VIENTIANE MAI newsman yesterday.

He mentioned some examples of environmental problems. In the northern part of the country, soil erosion is very serious, on average, soil erosion in a given area of one hectare is between 16-18 tons a year. This leads to soil degradation and unbalance, a fall in agricultural output, and drying up of rivers and streams.

Concerning the drying up of rivers and streams, the navigation on Nam Ou River between Nam Bak and the northernmost Phong Saly Province in the past were possible whole year round but not it is so only in the rainy season. The generation of electicity at Nam Dong power station in Luang Prabang during March and June is now possible only one hour a day. Nowadays the Nam Ngum Dam operates only two turbines out of the total four due to the low level of the water in the Nam Ngum reservoir.

Accordingly, the organisation is planning to collect data in a bid to find solution to these problems.

Mr. Noukon Simmavong further pointed out that Nong Chan, a marsh in the heart of Vientiane capital, became dried up and polluted since it gathered waste from the communities in the capital. In this connection, the organisation has installed equipment to collect data and information on waste water under the project of marsh allocation and use and aquatic animal preservation.

MALAYSIA

Expert Predicts Increased Health Problems From Japanese Radioactive Plant

BK1407125192 Hong Kong AFP in English 1029 GMT 14 Jul 92

[by P. Parameswaran]

[Text] Kuala Lumpur, July 14 (AFP)—Adverse health effects from radiation from a Japanese-owned plant in Malaysia's northern Perak state are already being felt and the worst is yet to come, a local medical expert said Tuesday.

Thambyappa Jeyabalan said incidences of leukaemia, miscarriages and loss of immunity have been reported among residents during his four-year research on the effects of the operations of the Asian Rare Earth (ARE) plant, which was set up in Bukit Merah village in Perak.

The health problems faced by residents followed patterns seen in the fallout areas after the atomic bomb explosions in Hiroshima and Nagasaki at the end of World War II, Jeyabalan told AFP in a telephone interview from Ipoh, Perak's state capital.

"The worst is yet to come. I foresee residents suffering from cancers of different sorts, for example lung cancer, by the end of the century," warned Jeyabalan.

Jeyabalan's warning comes three days after the High Court in Ipoh, the Perak capital, ordered the immediate closure of the ARE plant because it was producing and storing radioactive waste that was endangering nearby residents.

ARE is 35-percent owned by Mitsubishi-Kasei Corp., which set up the plant with local firms to produce rare minerals used in the fabrication of such things as electronic components.

The ARE factory extracted the minerals from monazite by processing tin tailings for export to Japan. But in the process, it produced thorium and lead as waste products.

Thorium, environmentalists said, was radioactive and extremely dangerous because it could pollute air, water, and soil.

Jeyabalan said his findings from 1986 to 1990 were used as a basis by residents involved in a seven-year legal tussle with the company, culminating in the court's order last Saturday for the plant's immediate closure.

He said he was asked by the residents to conduct brief checks on radioactive levels in Bukit Merah in 1986 "but the alarming results prodded me to stay on longer."

"I found the white cells depressed in all 300 children who underwent blood tests," said Jeyabalan.

His findings were endorsed by local environmental groups and the Perak Anti-Radiation Committee representing Bukit Merah's 15,000 predominantly ethnic Chinese residents.

Jeyabalan said further tests on 66 children showed majority of them had elevated lead levels in their blood, an indication that there was intake of thorium.

The 47-year old private practitioner said there was a correlation between the blood test results and findings in Marshall Islands where there was a fallout of radioctive material in 1957 owing to atomic tests conducted nearby.

He also checked the medical records of 108 "healthy" mothers between 1982 and 1986 to determine their childbirth pattern and discovered that 15 or 13.8 percent of them experienced unexplained miscarriages, including perinatal and neo-natal deaths.

"This was higher than the average ethnic Chinese rate of 1.8 percent and the average Malaysian rate of 2.5 percent," he said.

Jeyabalan said of the 43 births recorded from these mothers, 15 were unexplained stillbirths.

"The results of my studies are consistent with the studies done in Hiroshima and Nagasaki because the initial effect of radiation is miscarriages, followed by leukaemia and finally, solid tumours," he said.

Between 1988 and 1989, there were four cancer cases reported in Bukit Merah, of which three were leukaemia of the acute lymphoblastic, normally attributed to radiation, he said.

Two of the victims, a 11-year-old girl and a 19-year-old boy, died last year while the third, a five-year-old boy, is undergoing treatment.

"A woman who worked in the ARE factory in 1982 gave birth to a child with congenital defects in 1988, when a man working in the plant died of suspected pre-leukaemia," Jeyabalan said.

TAIWAN

Island Off Zhejiang Province Possible Site for Nuclear Waste Disposal

OW1107092192 Taipei CNA in English 0741 GMT 11 Jul 92

[Text] Taipei, July 11 (CNA)—If Mainland China agrees, Taiwan's low radioactive nulcear waste may be

disposed on a small island off Zhejiang Province, Taiwan Power Company President Chang Sze-min said Friday.

Mainland China will also face the problem of disposing radioactive waste in the near future because its Qinshan Nuclear Power Plant has already started operation and another in Daya Bay is under construction, Chang said.

He said high radioactive waste, which could be used to make nuclear bombs, is strictly controlled by international conventions, so cross-Straits cooperation in this area may not include the disposal of high radioactive waste.

Taipower meanwhile is continuing its search for a permanent place for the safe disposal of nuclear waste, Chang said.

Government To Phase Out CFC Consumption

OW3007094592 Taipei CNA in English 0746 GMT 30 Jul 92

[Text] Taipei, July 30 (CNA)—The Industrial Development Bureau (IDB) has mapped out a plan to reduce the consumption of chlorofluorocarbons (CFCs) in Taiwan, an official of the bureau said Wednesday.

He said the plan was mapped out according to a study by the Industrial Technology Research Institute on how to reduce CFC consumption in order to meet the requirements of Montreal Protocol.

The protocol urges industrialized nations to phase out the production and consumption of CFCs and other ozone-depleting chemicals by the year 2000.

The IDB has set targets for reducing the consumption of refrigerants, foaming agents, aerosol, and cleaning solvent in 1993, 1994, and 1995. The CFCs are important ingredients of the four products.

The IDB plan will soon be explained to Taiwan Plastic Industrial Association, Taiwan Refrigeration Industrial Association, and other relevant trade associations in the hope that their member companies will reduce the consumption of CFCs and CFC products accordingly.

"We will observe Montreal Protocol, although we are not a signatory of the treaty," the IDB official said.

THAILAND

Northeast Villagers Fight Forestry Department on Resettlement Program

BK1107015792 Bangkok BANGKOK POST in English 11 Jul 92 p 1

[by Sanitsuda Ekachai]

[Text] Nakhon Ratchasima—A week after a compromise, the northeastern villagers evicted under the Kho Cho Ko military resettlement programme still cannot return home as the Forestry Department is fighting back by stepping up tree-planting on the old village sites and farmland.

Village leaders from various provinces met their advocacy groups yesterday to discuss their shared problem and to urge the department not to block implementation of the Cabinet's decision to allow the villagers an immediate, safe return home.

The problem is most severe at Ban Long Yai of Soeng Sang District which spearheaded the exodus home last month and later faced a crackdown.

The incident triggered a large protest which ended last week with the revocation of the controversial Kho Cho Ko resettlement programme.

"They have doubled the ways to step up planting and nearly half of our farmland has been quickly covered this past week," said village leader Taeng Chumheran.

"At this rate, we won't have land to go back to. If we violate the area, we can be arrested," he said.

The authorities have also erected a new sign saying that the planting is part of the province's celebrations to mark Her Majesty the Queen's birthday as a tactic to stop the villagers.

The Government inspection team will visit the controversial sites in Soeng Sang today.

The villagers plan to give the team their complaints against the department's actions which they say are tantamount to an attempt to abort the Premier's directive and the Cabinet's decision.

Apart from the replanting tactic, villagers from various provinces also alleged similar attempts by local authorities to stir conflict among villagers by supporting those outside the agreement to vie for the land while mobilising those in the resettlement scheme to press for continuation of the programme.

"The authorities are pitting us against one another," Taeng said.

The atmosphere at Soeng Sang is still tense as armed forestry officials are still guarding the village entrance while a group of armed volunteers is stationed at the nearby resettlement area.

"We want to go back. But we are afraid. Anything can happen," said Taeng, who has a price on his head.

The Soeng Sang villagers also report a steady flow of processed timber being transported from the Thap Lan National Park while the clearing of the forest continues to provide land for settlers.

More than 10,000 rai of the park forest have been cleared for farmland since April. The Forestry Department described this destruction as necessary and legal.

The resettlement area and farmland also gives access to the timber-rich park.

The villagers and advocacy groups have set up a committee to monitor the implementation of the Cabinet's decision.

Their meeting also discussed the need to revise the national forestry plan which they see, in essence, as an attempt to legalise the confiscation of land from the poor to turn it over to investors in the guise of conservation.

The committee will meet Prime Minister's Office Permanent Secretary Aphilat Osathanukro on Monday to present the villagers' alternative to the "dictatorial" Kho Cho Ko land management scheme.

They will propose several forms of ecological farming which can help the region's environmental health.

But this cannot be done without involving local people in the management of land and forest as well as giving them land security.

The committee said it will also report the local officials' resistance to Deputy Interior Minister Anek Sitthiprasat who chaired the Government's negotiation delegation.

They expressed little hope, however.

Although the Kho Cho Ko programme has been revoked, the department is still empowered by the Forest Reserves Bill to arrest the villagers.

Environment Minister Stresses 'Realistic' Goals

BK2207063592 Bangkok THE NATION in English 22, 23 Jul 92 p A6

[Report on an interview with Environment Minister Dr. Phaichit Uathawikun by James Fahn; date, place not given]

[22 Jul, p A6]

[Text] With all the critical issues tied up in the environmental debate, the government's latest moves to fight pollution may result in something much bigger than a mere clean-up campaign. The country's first Environment Minister Dr. Phaichit Uathawikun, is hoping that businessmen will be convinced to change their attitudes in favour of more sustainable development. Environmentalists claim that such a move must coincide with the greater dispersal of power from Bangkok to the provinces. But while the government has taken some steps to delegate authority to provincial governors and bring community representatives into the decision-making process, the direct election of provincial authorities is still a long way off.

That is the opinion of Dr. Phaichit. And as the first person to take control of the former Ministry of Science, Technology and Energy since it changed its title to include environment (instead of energy), he knows whereof he speaks.

In an interview with THE NATION on Monday, Phaichit showed himself to be eager to change the sloppy practices of Thai industry, but well aware of the limitations he faces with only two months more in office. He repeatedly stressed the need to be practical and "realistic".

With such little time available, Phaichit is intent on building up the institutions that will enforce the regulations outlined in the new Environment Act, drawn up and guided through Parliament by he and his colleagues during the Anan I administration.

"We need to demonstrate that the law is enforceable and beneficial," he stresses. "A law may be passed, but if it is left on the shelf it will mean nothing."

The government then set about deciding where to start its environmental campaign. It considered tackling industry-ravaged Samut Prakan, "but the problems there are too tough. There's a lot of relocation involved. It will take years, not months."

Similar considerations caused them to rule out a much-needed clean-up of the Chao Phraya: "We thought about the rivers, but there we have to deal with watersheds. And cleaning up the Chao Phraya will take around Bt22 billion."

With Bt5 billion from the Environment Fund at its disposal, the administration finally decided that Phatthaya and Phuket were the best places to show that the new law can work.

The choice of these two locations raised some eyebrows. But Phaichit claims that "we didn't choose them because they are tourist resorts. We chose areas where environmental problems are bad, but not overwhelming, where there is high visibility, and some probability of success in getting something started to demonstrate the law is applicable."

In fact, Phaichit and Prime Minister Anan Panyarachun believe that Phatthaya's future does not lie in tourism. Assuming it can be made a more pleasant place, they see it as a future business centre for the Eastern Seaboard.

To help it towards this goal, the government is planning to spend Bt3-5 billion to clean up both Phatthaya and Phuket. The Environment Fund will then be almost completely drained, but Phaichit hopes that the Bt5 billion it currently holds is "only a beginning."

"Five billion baht should be a minimum for the Fund. We must renegotiate because this will not be enough. We will propose details on ways and means to replenish the fund. It will probably need continued contribution from the Oil Fund," he says.

Despite the financial backing, Anan and Phaichit are already discovering that implementing sustainable development will be even harder than it looks. In Phatthaya last weekend to hold a public hearing on the planned environmental campaign, they ran up against

what may be their biggest enemy: public indifference. Interest on the part of the business sector was especially lacking; only a handful of hoteliers showed up.

"They [people in Phatthaya] had no clue as to what this is about," says Phaichit, shaking his head. "Our intention was to create a new partnership, but to them it was just another seminar. We would like to see volunteers from the local community. We can provide equipment and funds, but they must supply the people." Phaichit dismissed some local suggestions—for instance, that boats be supplied to pick up garbage from the bay—as impractical. "It makes much more sense fnr them to stop throwing things away so carelessly," he maintains.

"We were not terribly successful," Phaichit admits. "But we didn't expect much. And we don't blame them since this kind of approach has never been done before. When it's clear we are serious, the community will respond."

Instead, government funds will be used to speed up construction of a waste water treatment plant at Na Klua, so that it will be completed in 1994 rather than 1997, and find a better way to dispose of treated water. This weekend (assuming the PM's schedule remains free) Anan and Phaichit will travel to Phuket.

According to Phaichit, the long range plan for these two areas is to set up local offices and arrange task forces "to clean up both the physical and social environment." Intriguingly, he draws a link between this plan and the eventual decentralization of political power.

He explains: "Conceptually, it would be better to delegate power out. But in practice it's not that simple. In some localities it would be dangerous. The local authorities could be captured by dark influences. We can't let that happen.

"We can't go in for the direct election of local officials. Real decisionmaking power has to be kept with the central government. We can't leave everything to mafia types. We have to use the task forces to clean up some of the social problems."

If Phaichit's analysis is correct, then could there be direct elections of local officials once such a clean-up has taken place? Phaichit refuses to say, merely stating that the situation in Thailand now is "like Chicago in the 1920s" an that Chicago today is much more democratic. "You have to be a little less idealistic, and more realistic," he admonishes.

But if the real obstacle to politica decentralization lies in the unwilling ness of Bangkok's bureaucrats to giv up some power, then these task force will represent little more than busines as usual.

The delegation of responsibility fol drawing up local environmental actior plans to provincial governors may seem like a step in the right direction, but these governors (with the exception of Bangkok) are appointed by the central government and their plans will b subject to ministerial approval. On the other hand, this step will let local community organizations have some access to decision-makers without having to lobby in Bangkok.

The new law's stipulation tha eight members of the National Environment Board [NEB] come from outside government—including NGO [non-governmental organization] representatives—also seems like progress, but it too is only tentative.

After all, two spots on the official delegation to the UNCED [UN Conference on Environment and Development] in Rio had been reserved for NGOs but were left unfilled because all the nominees were vetoed by one authority or another. Shamefully, Thailand's official delegation was one of the few in Rio which had no NGO representatives on board.

So who will decide which NGO representatives sit on the NEB? Phaichit makes it clear that the cabinet retains the final say on membership.

"There are many NGOs. Not all are credible in terms of intention or capacity." Those who wish to have a say in policy making will have to register, and must not engage in political activity, he adds. They will then be entitle to take part in the selection of representatives to the government.

"We can't ensure that there won't be conflict, but we expect they [NGOs] will be consulted. We recognize that unless NGOs are involved we can't solve these problems," he asserts.

[23 Jul, p A6]

[Text] The Anan government has been busy developing the institutions that will enforce the new Environment Act, but it is not the only important new piece of environmental legislation that has been implemented recently. New versions of the Factory Act and the Hazardous Substances Act have also been passed.

Unfortunately, however, with only two months left in office Environment Minister Dr. Phaichit Uathawikun admits that the other pieces of legislation will be hard to enforce.

"We won't have time to build them up like we are doing with the Environment Act," he says. If the next government does not take them seriously, he says anxiously, they risk becoming mere scraps of paper.

Phaichit's concern is warranted since these acts tighten up regulations on the licensing of new factories and the use of transport and disposal of dangerous materials, respectively. They are designed to help prevent accidents of the type which have recently plagued Thailand (such as the Petchburi Road LPG fire, the Klong Toey chemical waste dump explosion, and the Phang Nga dynamite truck blow-up).

"At the moment, we are really just a disaster waiting to happen," worries Phaichit. "We have had some bad accidents, but these are only minor incidents compared to what could happen."

Less deadly but perhaps equally serious are pollution incidents such as that which took place earlier this year in Khon Kaen. The incident, blamed on the leakage of molasses from a Khon Kaen sugar mill, caused the death of tens of thousands of fish in the Nam Pong and Chi Rivers, destroyed the livelihoods of local fishermen and deprived local villagers of one of their few sources of protein.

Just before leaving his post as PM's Office Minister during the last Anan administration, Phaichit explicitly called for an investigation into the incident. But despite a recent crackdown on other polluting factories, the sugar mill has suffered little so far.

The Department of Industrial Works (DIW) within the Ministry of Industry ordered the plant closed for 180 days. But since the incident occurred at the end of the sugar season, which will not start again until much later in the year this measure has had little impact on the company's business operations.

What's more, the DIW is now reportedly seeking to revoke the order.

A source in the DIW who does not wish to be named, says that this will allow the plant to undergo maintenance, but he also notes that once the closure order is revoked, it will be revoked for good.

The mill was also supposed to pay damages of Bt [Thai baht] 56 million: Bt5O million as compensation for the destruction and Bt6 million to Khon Kaen University for an investigation of the ecological impact on the river. So far, however, it hasn't paid anything.

The Fisheries Department's Chunchet Kamchanakeson says this is because the company does not want to pay now lest it prejudice itself in a suit being filed against it by the Provincial Waterworks Authority, the Fisheries Department and the DIW. The case will reportedly have to be tried under the old version of the Environment Law, since the incident took place before the new, stricter law took effect.

Nevertheless, the firm may benefit from the new law because, according to the agency source, the DIW is planning to submit a request on behalf of the company for a loan of Bt6 million from the Environment Fund (made permanent by the new law) to pay for the investigation.

Observers are puzzled by this action in light of the strict environmental crackdown being carried out at the nearby Phoenix Pulp & Paper Co, also situated on the Nam Pong River. The DIW source says that his agency believes what happened at the sugar mill was just an accident, whereas the Phoenix plant is a full-fledged environmental polluter. Little has been heard about the sugar mill's waste treatment. Asked whether he would approve the Bt6 million loan, Phaichit is noncommittal: "I'd be very surprised if we ... make funds available in place of what the private sector should pay," he says. The loan request could test the government's commitment to the "Polluter Pays" principle.

Another conflict of interest between local fishermen and industrial developers is brewing on Koh Si Chang in the Gulf of Thailand. The Hongladarom family has been granted title to a large chunk of land there on which it has been blasting a quarry and plans to build a deep sea port. Local villagers fear their livelihood—dependent on the tourism and fishing trades—are threatened by the development.

Speaking on the issue, Phaichit complains that "There has not been much of an attempt to make sure the interests of the local people are protected. Only 2,800 people live on the island it should not be all that difficult to make sure they will gain.

"The quarries can be rehabilitated. After all, water reservoirs are badly needed on the island. And it would not be costly for the company to build a new pier. There has been a lack of communication. The port is seen as a threat, which it could be, but not necessarily. We can help them protect the environment."

There is, he asserts, a principle a stake. "Business can't just go into any community and do what it wants. The only way to prosper is to take the local people along. Companies must learn to practice community relations. Business will have to be a little bit more humane.

"Phatthaya is a good example. It used to be just a small fishing village. When the developers moved in, who paid any attention to the local people or environment? Now see the results."

Over the next ten years, he predicts five million people will have to move out of Bangkok. Most of them will go to the Eastern Seaboard, many to Phatthaya if it's attractive enough. New tourism development elsewhere will take away the city's current business. If it doesn't move to become a business centre "Phatthaya will become a ghost town," he says.

Phaichit points out that many conflicts, concerning both government and private-sect projects, similar to the one on Koh Si Chang are likely to take place in the future. Does settling these disputes mean promoting greater equality in the distribution of income?

"It means doing things properly," responds Phaichit. "It means using common sense, being a little bit more socially aware, planning on a longer term basis.

"We are just asking them [Thai businessmen] to be a little bit more responsible, more enlightened in seeking a profit.

"Attitudes will have to change; it doesn't cost all that much to get waste treated. We have to get across to the

private sector that these are legitimate costs of doing business, like salaries or electricity bills.

"Once they see this, they will adapt quickly," he predicts. "Business and society will sink or swim together."

Timeframe for Implementation of Earth Summit Measures

BK2307012592 Bangkok BANGKOK POST in English 23 Jul 92 p 8

[Text] It will be some three years before Thailand can be expected to start implementing two conventions on biodiversity and climate change, and the 800-page-thick Agenda 21, signed at the Earth Summit last month.

Kasem Sabnitwong Na Ayutthaya, permanent secretary of the Ministry of Science, Technology and the Environment, told the BANGKOK POST yesterday there remain many steps to be undertaken nationally and many areas to be settled internationally before Thailand can start implementing the three documents.

"I think it will be some three years before we can really start, but our environment and development policies have already moved towards the principles of both conventions," said Mr. Kasem.

He cited the new environment law and the incorporation of environmental concerns in the five-year national development plan, as well as environmental measures undertaken individually by other government agencies.

Members of the official Thai delegation to the Earth Summit, or the United Nations Conference on Environment and Development (UNCED), are finalising their reports on the proceedings of the 12-day conference, held June 3-14 in Rio de Janeiro, Brazil, to be submitted to the Cabinet.

They are also finalising "a broad framework" of recommendations for the implementation of both conventions, officially called the United Nations Framework Convention on Climate Change, and the United Nations Convention on Biological Diversity, and Agenda 21 (a set of guidelines for incorporating the environment and development efforts).

The recommendations also include tentative matches of who-does-what between various government agencies and the various articles under both conventions and Agenda 21, to be implemented.

Mr. Kasem said he expected both the reports and recommendations to be submitted to the Anan Panyarachun Cabinet by next month for approval in principle, and since the conventions also deal with legislation, ratification by Parliament is required, "so we have to wait for the next government".

"We have yet to finalise which ministry will be responsible to coordinate the implementation of the conventions. It should be the Ministry of Science, Technology and the Environment, because now we are a ministry of the environment, not just a small agency to deal with the environment," he said.

Mr. Kasem added that other steps to be taken nationally include reviews of national legislation with the aim of making improvements and amendments where necessary, and drafting of new legislation, in accordance with the priciples of the two conventions and Agenda 21.

"Because the environemt and development work involve so many sectors, after the Cabinet approves the reports and recommendations, a meeting of all concerned, including non-government organisations (NGOs), will be held to work out in detail who and how to implement the conventions and Agenda 21, Mr. Kasem said.

He said Thailand has also to work out what it can and cannot do under the three documents. "Some articles under Agenda 21 are just beyond our capability and resources," he said.

All documents remain non-binding. Under UN regulations, both conventions will be binding after at least 50 member states have ratified them. Both conventions will remain open for signing and ratification until June 1993.

Mr. Kasem stressed that Thailand has much to gain from incorporating the environment into development, and voiced his concern about the quality of the politicians who will be elected in the September 13 election.

"I hope it will not be business as usual when dealing with the environment; just stating a political will is not enough, we need political action as well.

"Who will become the next minister (of science, technology and the environment) and who will follow later, will be very crucial to the incorporation of the environment and development," said Mr. Kasem.

Internationally, Mr. Kasem said, the issue of financial resources is yet to be settled. UNCED organisers were hoping for industrialised countries which are responsible for most of the world's pollution to contribute US$125 billion towards the implementation of the three documents, but failed to raise the amount.

The total annual budget estimated is US$625 billion. Developing countries have to contribute 80 percent to global cleanup efforts.

Another issue still unsettled is which financial institution(s) will manage funds contributed by industrialised countries, and how it will function.

The developed countries prefer the newly-established Global Environment Facility (GEF), managed primarily by the World Bank, and less by the UN Environment Programme (UNEP) and the UN Development Programme (UNDP).

But the developing countries do not want a Western-dominated financial institution to dictate to them.

Also, details about a reporting system, a monitoring system and technology transfer have yet to be worked out at the international level.

Japan Consulted on Relocation of Nuclear Facilities

BK2907042992 Bangkok BANGKOK POST in English 29 Jul 92 p 3

[Text] A six-member delegation from the Japan Atomic Industrial Forum (JAIF) yesterday held talks with Thailand's Office of Atomic Energy for Peace (OAEP) on a plan to update and relocate OAEP's nuclear facilities.

In a telephone interview, Tatsuo Aoki, general manager of JAIF's International Nuclear Cooperation Centre, said from Tokyo that OAEP had sought "technical advice" from JAIF on its plan to relocate its nuclear facilities.

"The facilities are for research purposes," he said, such as for the production of radio isotopes for medical use.

Mr. Aoki added that the facilities may also be used in the research of nuclear activation analysis, but it depends on OAEP.

He denied the reactor would be used for experimental electricity generation.

However, the mass circulation MAINICHI SHIMBUN recently reported that JAIF was making preparations to export a nuclear reactor to Thailand, based on the JRR-3, which was developed by the Japan Atomic Energy Research Institute as a nuclear research vehicle with an output of 20,000 kilowatts.

It also reported that the JAIF delegation, headed by Dr. An Shigehiro and including technical experts from Hitachi Ltd and NKK, the company that built the JRR-3, was expected to present to Thai officials conceptual diagrams of a version of the JRR-3 able to produce 5,000 kilowatts of power.

If Japan is awarded the contract, it would conclude legal documents required for the sale of the reactor. Construction would take two or three years, and would begin in the second half of 1993.

In his telephone interview, however, Mr. Aoki said the talks were aimed solely at "technical advice for the time being," and the prospect of selling a nuclear reactor would be discussed later.

Contacted yesterday, the information division of OAEP said further details would be available today.

Meanwhile, the Thai News Agency quoted OAEP secretary-general Suchat Mongkhonphan as saying on Saturday that his office had plans for a "new site for the office's nuclear facilities" in Tambon Saimun, Ongkharak District, Nakhon Nayok Province.

He said some 150 community leaders and representatives were invited to visit the OAEP facilities on Wiphawadi Rangsit Road.

OAEP experts visited the community last June to explain the project.

JAIF is a non-profit organisation comprising some 800 companies, mainly nuclear component manufacturers, electric utilities and research and development organisations.

BULGARIA

EC Energy Center Opens in Sofia

AU1007174292 Sofia BTA in English 1452 GMT 10 Jul 92

[Text] Sofia, July 10 (BTA)—An energy centre of the European Community was opened here today. The formal opening was attended by Rolf Meijer, director of the Energy Technologies Department with the EC Commission and of the General Directorate for Power Engineering (DG XVII).

The work of the Sofia-based centre is managed by the General Directorate for Power Engineering through the THERMIE Programme, aimed to introduce existing power generation technologies and develop new ones. Three Greek organizations -Kantor, Exergia S.A. And EPU-NTUA, were commissioned to set up the centre in Sofia. Representatives of the Greek organizations, Bulgarian officials and Mr. Meijer spoke about their work in this country at a news conference before the centre's opening today.

The energy centre has already had meetings with Bulgarian economic managers and representatives of power engineering, industry and trade in Sofia. They will be followed by meetings in the provinces next week.

The EC Energy Centre in Sofia has several projects for cutting down energy consumption in Bulgarian industry. Under one of them energy consumption in the food industry will be monitored and a mobile laboratory will maintain the heat and energy balance of enterprises. There are also projects for using new insulators in the central heating system and control over heat energy consumption in large administrative buildings. The diesel engines of sofia's city transport buses will be adjusted.

The centre will hold two seminars with the participation of EC experts in the next four months.

CZECHOSLOVAKIA

New Slovak Minister on Gabcikovo, Other Issues

AU0907201492 Bratislava SMENA in Slovak 7 Jul 92 p 4

[Interview with Jozef Zlocha, minister-chairman of the Slovak Environment Commission, by Jana Bogarova; place and date not given: "Gabcikovo—The Course of Opinions Is Consistent"]

[Text] New Slovak Government Minister Jozef Zlocha comes from the Vah Valley. Before he took up his post, he was a Federal Assembly deputy and a member of the Environment Committee. So, this sphere is not completely alien to him.

[Bogarova] *We have many environmental problems in Slovakia. However, the budget deficit does not offer much hope for their rapid improvement. What do you intend to do in the government to ensure that your department has enough funds?*

[Zlocha] We knew about the deficit, but what we heard at the government session gives cause for concern. At the moment, I cannot imagine where we will get the funds we need. A substantial part of the funds in the Environment Fund have already been distributed. Fees [prostriedky z poplatkov] could still be collected before the end of the year. Our predecessors did not manage things well. Not only will we have difficulties, other departments will have them as well.

[Bogarova] *The previous government recommended that its successor reduce the size of part of the special state administration for the environment....*

[Zlocha] I think a special state administration for the environment is essential. Anyone committed to economic results has always found a way to avoid regulations at the very least, if not the law.

[Bogarova] *Will the new government's line concur with the points of view expressed by Jan Carnogursky's government on the Gabcikovo water project?*

[Zlocha] It will be approximately the same. We want to resolutely insist on fulfillment of the 19 conditions drafted by the previous Slovak Environment Commission. We could cause unnecessary harm if we are not careful.

[Bogarova] *So, you do not believe in the natural disaster scenario that the Hungarian side keeps referring to?*

[Zlocha] I do not believe in it for the simple reason that the arguments presented by the project's opponents often have no logical basis. For example, Mr. Duray has taken great delight in claiming that the project is a megalomaniac and Stalinist project via which communism should be exported to the Western world. This is a little naive. Some people have mentioned the seismic dangers. I am a geologist, and I know the geological structure of Rye Island [Zitny Ostrov]. I have also commissioned expert studies from the Slovak Academy of Sciences Dionyz Stur Geological Institute and other institutions.

[Bogarova] *Do you agree with holding the Olympic Games in the High Tatra Mountains, although, according to the law, no activity other than conservation activity is permitted in national parks?*

[Zlocha] I could not give you an opinion on this issue at the moment. I have to find out what the sportsmen and conservationists think and what the consequences of possible construction in the Tatras will be.

HUNGARY

Government Considers Taking Bos-Naygmaros Issue to Hague Court

AU1407105892 Budapest NEPSZAVA in Hungarian 8 Jul 92 pp 1,5

["V.F."-signed report on interview with Ferenc Madl, minister without portfolio in charge of the Bos-Naygmaros issue; place and date not given: "Will Budapest Turn to the Hague on the Bos Issue?"]

[Text] The Hungarian Government will probably turn to the International Court in The Hague to complain about the failure to halt the construction of the so-called "C" version at the Bos river dam that would divert the flow of the Danube River. We were told this by Ferenc Madl, minister without portfolio in charge of the Bos-Nagymaros issue, on the occasion of a renewed note of protest sent by Budapest to the Prague and Bratislava governments about the illegal construction.

Ferenc Madl confirmed our previous information, according to which no official answer has yet come from Prague even to the first Hungarian protest. Asked whether the results of the CSFR elections and the composition of the Slovak Government could affect the results of the bilateral negotiations on the dam issue, Ferenc Madl was unable to give a clear answer. "Everything depends on whether an independent Slovak Republic is created or not"—Ferenc Madl said, and he added that he did not think that this would happen in the foreseeable future. However, if this happens, it will be necessary to rapidly clarify which new state will hold negotiations on the Bos-Nagymaros issue because, so far, the Federal Republic and its government have been our official partners.

At the same time, Ferenc Madl does not exclude the possibility that, because of the political situation that has emerged in Slovakia after the elections, certain circles might temporarily merge the issue of the Bos construction with that of the situation of the Hungarian minority in Slovakia. "However, I do not think this expected process will determine things in the long term because, nowadays, limiting the national minority rights and using national minorities as a means of blackmail is a position that can hardly be defended on the international arena"—Ferenc Madl said.

Speaking about the technical problems of the Bos project, Ferenc Madl thinks that there is serious suspicion that serious quality mistakes have been made at the headwater dams. Therefore, once the CSFR reply comes, the next bilateral negotiations will obviously deal with the technical and security issues, too.

Ferenc Madl also clarified the reason behind the failure of the tripartite joint committee on the project's environmental effects to start its work. "According to the Hungarian position, the unilateral diversion of the flow of the Danube River violates Hungary's territorial integrity, and it also contradicts various international agreements. Therefore, we asked them to halt the construction of the "C" version for six months, for the duration of the committee's work. Although the third member of the planned committee, the EC, also repeated this request, no agreement has been reached. We simply cannot imagine a situation in which the Slovak action continues while we are holding negotiations."

As for another plan, namely turning to the International Court in The Hague, Ferenc Madl pointed out that, if no agreement is reached on halting the "C" version, the Hungarian side will request the assistance of various international forums. "In case of a bilateral failure, we might also turn to the International Court in The Hague, because the "C" version is an illegal act, and we will turn to the International Court to halt that"—Ferenc Madl said and also mentioned the expected demands of the other side. According to Ferenc Madl, the partners will turn to the court to annul the Hungarian abrogation of the CSFR-Hungarian bilateral state contract and to receive some kind of compensation. However, a lot of things could happen until then. For example, when this interview is being prepared, the new Hungarian note of protest had probably already been handed to the head of the CSFR diplomatic mission in Budapest, a repeated Hungarian answer to the construction of the "C" version.

At the same time, Ferenc Madl is optimistic about the future, and he hopes that a bilateral agreement could be reached after all and the other side would understand that the conclusion of the Bos power station could represent serious dangers in every respect. "If the Slovak Republic is created after all, its leaders who, in my opinion, will conduct a realistic policy will have to take into account the fact that, given the longest border area, Hungary will be the new state's largest neighbor. Therefore, from a realistic political viewpoint, there is serious interest in maintaining good relations"—Ferenc Madl said.

POLAND

Minister Assesses State of Poland's Environment

92WN0578A Warsaw POLSKA ZBROJNA in Polish 26 May 92 p 3

[Interview with Professor Stefan Kozlowski, minister of environmental protection, natural resources, and forestry, by Marek Sieniawski; place and date not given: "The Rape of Nature"]

[Text] [Sieniawski] *We all want to live in a healthy environment, but at the same time we do not respect our surroundings. Sometimes one gets the impression that only your ministry is concerned about environmental protection.*

[Kozlowski] I do not think it is as bad as you indicate. Many ecological movements and foundations, of which there are already several hundred, are concerned about protecting the environment. We also have a network of ecological schools and a group of teachers and young people who want to be trained in this field. Recently I was in Opole, where the Center for Ecological Education is in operation at the Higher School of Pedagogy; the periodical PRZYRODA I CZLOWIEK is published there. The first chair of Ecophilosophy in Poland has been opened at the Lodz Polytechnical School. In Lublin, Professor Zieba is publishing a new periodical titled ECOLOGICAL HUMANISM. The interest of the younger generation in the subject of ecology is enormous.

[Sieniawski] *In which domains may we expect significant improvement in our natural environment?*

[Kozlowski] The heavy load of air and river pollution has declined considerably. To a great extent this has been caused by the economic recession. The influx into Poland of polluted air from the west will drop, since the Germans are modernizing their very noxious industry.

[Sieniawski] *On how large a scale is this phenomenon of imported pollution occurring?*

[Kozlowski] This influx of air, which comes from Czechoslovakia as well, is already causing a catastrophic situation for the forests in the Sudetenland. Our emissions abroad are far exceeded by the influx of polluted air entering Poland. Since January we have dramatically increased fines for polluting the air. This will force plants to reduce emissions. The mechanism is already in order. Moreover, we are putting in large and very large installations to desulfurize gasses in electrical power plants.

[Sieniawski] *There is foreign aid available for such operations. How much is available?*

[Kozlowski] There are bilateral agreements with Finland, Denmark, and Holland which provide for the participation of Western firms in the construction of waste treatment plants in Poland. There are subsidies for aiding these operations. There is the ostensibly complete system for monitoring pollutants in Krakow, a gift of President Bush. We have obtained a program from the World Bank for making Polish forests biologically variegated. This will be a completely new approach to the cultivation, utilization, and protection of forests.

[Sieniawski] *Not so long ago when you were in Silesia you proposed supplying households with electrical power alone so as to eliminate the burning of coal in residences. This would improve the condition of the air significantly in this region.*

[Kozlowski] So-called low-emission coal is extremely dangerous. In the first stage we are battling it in Krakow thanks to a gassification program. This is also the case with Upper Silesia. Electricity will be increased. The making of coal into briquettes may be effective for creating smokeless fuel. These are already concrete solutions. On 29 May we are opening an office of the so-called Katowice-Ostrawa Program, sponsored by the American Agency for Environmental Protection. This program introduces a basic change in manufacturing and production technology in order to reduce significantly the emission of pollutants in this region.

[Sieniawski] *Aside from the sweeping programs set in motion by the ministry, how can each one of us contribute to environmental protection?*

[Kozlowski] This year we announced the year of battling refuse. It began with the celebration of Earth Day worldwide. This is an opportunity for organizing systems for getting rid of household refuse. It is already in operation in the Paderewski residential community in Katowice, where Mr. Zadlo organized the collection of sorted refuse into colored containers. A similar project is underway in Warsaw's Na Skraju residential community thanks to the Long Frank private firm run by Mr. Frankowski. Under these programs refuse is recycled instead of being piled up into landfills.

[Sieniawski] *Whose responsibility is the entire sphere of organization of such endeavors?*

[Kozlowski] The ministry will not handle this. The disposal of refuse in cities must be fully privatized. Self-governmental authorities have an opportunity to demonstrate their skill at this. They must find a location for a storage yard, for composting and for burning. Concrete methods and technologies in this field already exist. Gminas must get started doing this. We will give them the necessary help.

[Sieniawski] *The Astra firm, from the Gorzow Voivodship, wants to produce bentonite, a material for sealing refuse and trash storage containers. The foreign capital is available, but it cannot enter Poland due to various barriers. Can the producer count on the ministry's support?*

[Kozlowski] We do not have special funds for such endeavors. Credit may be obtained from the National Fund or the Environmental Protection Bank. However, there is a problem with government guarantees for small investments which are granted by the Trade Bank. We are trying to get the Environmental Protection Bank to grant guarantees for this type of small investment. Private firms can contribute quite quickly toward improving the state of our environment.

[Sieniawski] *We are being flooded by a mass of foreign goods with varying degrees of toxicity. How has the ministry been counteracting this?*

[Kozlowski] That is our duty. For this reason we have organized a policy of ecology, i.e., the State Environmental Protection Inspectorate [PIOS]. This inspectorate has been quite successful at battling attempts to smuggle various toxic types of wastes into Poland. Director Swiatek from the PIOS has recorded many

instances of highly toxic substances being sent from abroad into Poland, brought here under the guise of raw materials for production. For example, fly-by-night enterprises crop up simply for the purpose of making a one-time transfer of waste. We seized such a transfer of zinc-containing wastes which are in Szczecin. I raised this issue during my last trip to Germany. But the particular firm has already been dissolved. There is no one to catch.

The Germans have agreed to a mechanism whereby even if there are no perpetrators left, these transports must return to Germany. but this requires the appropriate legal regulations. Some transports have already been returned. The Germans are a solid partner. They are seeking the sum of $300,000 to return 7,000 metric tons of zinc-containing wastes to Germany. Twelve metric tons of galvanic wastes lie in Katowice and should also be returned.

[Sieniawski] *But there are always new ways being invented of transferring waste.*

[Kozlowski] For example, waste transports from Germany are taken to Ukraine, after which they are deposited in Poland. We have many people who will do anything for a pittance. Hence the appeal to report all attempts to deposit waste in Poland from Germany or other Western states.

[Sieniawski] *What place on the ecological map of Poland does the military hold?*

[Kozlowski] We have many agreements with the Polish army. This cooperation is shaping up well. The army is sensitive to environmental protection. We have a major problem with the bases used by the Soviet armies. It is shocking to see the contamination of enormous expanses with oil-derivative products. For example, in Brzeg water intakes are contaminated. We must find the means to pump out crude oil and gasoline. For if we leave them there, they will begin to attack our water intakes.

[Sieniawski] *There are four nuclear electrical power plants of the Chernobyl type along Poland's borders within the areas of the former GDR. This is an enormous threat to Poland as well.*

[Kozlowski] During my last trip to Germany we talked about this very subject. We represent the view that these electrical power plants should be closed immediately. We discussed the issue of creating in Europe power reserves to make it possible for such countries as Lithuania, Ukraine, and Bulgaria to disconnect gradually obsolete nuclear electrical power plants gradually. We have energy surpluses and soon the building of new electrical power plants will be completed. We are also proposing the building of a gas pipeline from the area of the Sea of Norway and the North Sea to Poland, with branch lines to Lithuania, Czechoslovakia, and Bulgaria as well.

[Sieniawski] *What matters is the ministry unable to resolve?*

[Kozlowski] We are having difficulty creating the Agency for Respecting Energy. For many months, the Ministry of Industry has been promising to create it, but no progress is evident despite the many attempts to coordinate the project and many promises. We have been unable to bring about a rapid change in the training programs in manufacturing technology. These programs take into account neither biology nor environmental protection. We are bringing up young people unprepared to resolve the crucial problems they will encounter at the very beginning of the next century. We cannot dispel a certain conservatism in the areas of training programs in elementary and secondary schools.

[Sieniawski] *Apart from concrete organizational and technological moves, the state of the ecological awareness of Poles is extremely important.*

[Kozlowski] We are tremendously out of touch with bordering EEC states in this regard. In these states, it is unthinkable for people to dump wastes into streams, lakes and forests. We are constantly burning meadows. That does not happen in these countries. In the West many things are explained to people and, at the same time, a mechanism of fines and guarantees has been created. We are in need of a tremendous educational effort.

BOLIVIA

Foreign Ministry To Reject Nuclear Waste Dumping Requests

PY1507034892 La Paz Television Boliviana Network in Spanish 0200 GMT 15 Jul 92

[Text] The Bolivian Foreign Ministry has not authorized, and will not authorize, the dumping of nuclear waste into our country.

In a news conference held today, Foreign Minister Ronald MacLean said: So far the Foreign Ministry has not received a request from the U.S. Government in this regard, but if one is received I would reject it, as it would mean an attack on the ecology of our country.

[Begin MacLean recording] Obviously Bolivia has not officially received any request, and if it receives one I would never accept it. As I said, Bolivia has not accepted and never would accept that such waste be deposited in our country. All Bolivians who hope to live here all their lives, in a place where our sons and grandchildren also will live, would never accept such a thing. But if some day it is verified that someone—I do not want to say who—could have brought such waste here, it would obviously be a very serious thing, as it would be completely outside the law. We would take the necessary measures to defend the ecology of this country, its environment, and obviously our sovereign rights in Bolivia. [end recording]

Regarding the incident that took place in Santa Cruz last weekend, where a U.S. citizen reportedly wounded a Bolivian, Minister MacLean said that it is the responsibility of the Interior Ministry to take the appropriate legal steps.

BRAZIL

Collor Announces Information Satellite Launch 'Late This Year'

PY1407011792 Brasilia Voz do Brasil Network in Portuguese 2200 GMT 13 Jul 92

[Text] The first Brazilian satellite will be launched late this year. This announcement was made today by President Fernando Collor during a meeting with Science and Technology Secretary Helio Jaguaribe.

Bank of Brazil Chairman Lafayette Coutinho will sign this week the agreement for financing the satellite launching, worth $14 million. The satellite, for gathering environmental information, was built entirely with Brazilian technology, and will be launched by the U.S. firm Orbital Science Corporation.

Environmental Affairs Institute Head Tenders Resignation

PY1407012092 Rio de Janeiro Rede Globo Television in Portuguese 2300 GMT 13 Jul 92

[Text] IBAMA [Brazilian Institute for Environmental Affairs and Renewable Natural Resources] President Maria Tereza Padua today tendered her resignation. Environment Secretary (Flavio Ferro) will fulfill Padua's functions.

Maria Tereza Padua took over in March. Her assistants said that she might have resigned because she had been pressured in appointing state superintendents.

President Collor Installs New Environment Secretary

PY1507032792 Brasilia Voz do Brasil Network in Portuguese 2200 GMT 14 Jul 92

[Text] President Fernando Collor today installed Flavio Perri as the new environment secretary in a ceremony held at Planalto Palace. Perri is replacing Education Minister Jose Goldemberger, who has been acting environment secretary since last April. Flavio Perri, 52 years of age and born in Sao Paulo, is a career diplomat. He was the executive secretary of the national work group of the Rio-92 conference.

President Fernando Collor said that the appointment of Flavio Perri was the best way to pay homage to all Brazilian diplomats. Collor added that a great deal of the Brazilian success at Rio-92 was due to the work of Brazilian diplomats and to the actions of foreign policy.

[Begin Collor recording] Rio-92 made all Brazilians very proud. We are aware that a great deal of the Brazilian success was due to the work of the diplomats and to foreign policy actions. This is the reason for your appointment, Mr. Secretary; it is an homage to Brazilian diplomats. [end recording]

President Collor also said that the greatest challenge for the new secretary will be to implement the proposals for sustainable development which were approved by Rio-92.

[Begin Collor recording] I recognize that your mission is difficult and complex. When I mentioned some of the tasks that were entrusted by Rio-92, I was only listing some of your tasks. Other challenging tasks will be to implement the national environmental policy in its multiple dimentions; to stimulate youth and create in them a real awareness ecology and social justice; to build a solid institutional basis for the functions of the Environment Secretariat; and to propose ideas and methods for the rational defense of our natural resources. This is a challenge that demands multiple talents, which you have already been shown to possess. [end recording]

Jose Goldemberger also praised the work done by Flavio Perri at Rio-92.

[Begin Goldemberger recording] I have the greatest satisfaction in handing over the position to Mr. Perri, who has shown in the preparation of Rio-92 all the necessary credentials, both from the administrative and political sensibility point of view, to hold his position with great success. [end recording]

Flavio Perri announced that he will place the secretariat in the best possible harmony with Ibama [Brazilian Institute for Environmental Affairs and Renewable Resources]. He spoke about how he hopes to promote sustainable development in the country.

[Begin Perri recording] I intend to promote an effective development effort for the preservation and conservation of nature, more through the technique of stimulation than through the mechanisms of orders and prohibitions. As Professor Celso Lafer [Brazilian foreign minister] has taught, I hope to promote studies with other organizations in order to motivate sustainable development. [end recording]

Perri also announced that he will take over the presidency of Ibama, which is now vacant with the resignation of Maria Tereza Padua yesterday. Flavio Perri said that the resignation of Maria Teresa Padua was a decision made through common consent. Perri added that he is taking over Ibama so as to be able to know this organization better.

[Begin recording] [Correspondent Alexandra Felma] Flavio Perri also decided to take over the presidency of Ibama, so as to be able to get to know this institute, which is considered the main organization carrying out the orders of the Environment Secretariat. This explanation was given by Perri during the transfer ceremony held in the Ibama auditorium. Flavio Perri believes that there should be perfect integration between the Environment Secretariat and Ibama, in addition to an integration between the secretariat and the other organizations of the federal government. Perri also said that for the time being there will no changes in the Ibama structure.

[Perri] I would not even think of any changes. For the time being, I intend to become familiar with its current structure and to work with it. There is no reason to think of changes while one is still unacquainted with it. It would not be correct.

[Felma] Perri said that he still does not know how long he will head Ibama. Former Ibama President Maria Tereza Padua promised to cooperate with Perri if he so desires. [end recording]

Data Bank To Help Investors Planned

PY0508140692 Brasilia Radio Nacional da Amazonia Network in Portuguese 1000 GMT 5 Aug 92

[Text] The Strategic Affairs Secretariat is planning to set up a data bank with infrastructure, environmental, and economic information about Brazil.

The bank's purpose is to give national and foreign investors an idea of the investment opportunities in Brazil.

Information on the data bank's creation was disclosed by Strategic Affairs Secretariat Director Eliezer Batista, who met with 50 representatives of state governments at Planalto Palace.

CHILE

Opposition Politicians Criticize Environmental Commission

PY1507014992 Santiago Radio Cooperativa Network in Spanish 2300 GMT 14 Jul 92

[Text] Rafael Ansejo, National Environment Commission [Conama] executive secretary, has stated that he disagrees with the criticisms made by government and opposition politicians against the activities of the Metropolitan Region Special Environmental Commission.

Ansejo released a study conducted by Conama which included 1,288 environmental problems in the 13 regions of the country. The study was made on the basis of statements by university students, technical organizations, and media representatives.

The problems comprise three basic areas: pollution, 35.9 percent; environmental deterioration in populated areas, 36.8 percent; and environmental resources deterioration, 27.3 percent. The main problems in Santiago are the lack of infrastructures for sewage disposal, contamination of natural water sources with solid and liquid waste, and air contamination caused by fixed and mobile sources.

The study provides for a total of 136 environmental problems in the Metropolitan Region. Ansejo noted that people are becoming more aware of the environmental problems, but that unfortunately this fact does not entail a personal commitment to solve them. Asked about the criticisms made against the Metropolitan Region Special Environmental Commission, Ansejo said that he rejected them. He also stressed the government's efforts to solve environmental problems.

[Begin Ansejo recording] The government has made a sustained effort, because people nationwide are aware of the problem. I consequently believe that this effort should be maintained and consolidated, that we should continue to pave streets, reduce industrial emanations, rationalize industries and vehicles, and change our attitude with respect to the use of vehicles in favor of metropolitan and noncontaminant transport, promoting the use of electric transportation. Meanwhile, we should continue observing the emergency measures. [end recording] Asked whether these criticisms involve political interests, Ansejo said: Yes.

GUATEMALA

EEC Donates $3 Million for Ecological Project

92WN0647A Guatemala City DIARIO DE CENTRO AMERICA in Spanish 3 Jun 92 p 3

[Text] A solid-waste treatment plant and a sewage waste system will finally save Lake Atitlan, considered one of the most beautiful in the world, from pollution. The plant will be built with a contribution of $3 million from the European Economic Community.

This according to the congressman from Solola, Julio Diaz Chay, who went on to say that construction will begin on the sewage system and treatment plant on 8 June 1992 and will take about two and a half years to complete because it will include the entire city of Panajachel.

Financial support from the EEC is contained in project ALA-88-82 and was obtained after many months of bureaucratic transactions and negotiations. It was almost lost—Congressman Diaz Chay said—because of delays due to bad faith on the part of the Institute for Municipal Promotion (Infom), which never turned over the plans for the works project.

The project means that Lake Atitlan will no longer continue to serve as the final depository for excreta, which will halt the pollution it is now experiencing, and, with several additional rehabilitation programs, its waters will regain their purity.

Congressman Diaz Chay expressed his gratitude to the mayor of Panajachel, Dr. Sergio Augusto Lavarreda, for his interest in bringing this historic project to reality, which will benefit not only the people of the community, but also the thousands of visitors, foreign and national, who come to Atitlan each year.

He also expressed his thanks to the European Economic Community for such important cooperation for Panajachel and for Guatemala.

A similar project for the construction of sewers and a wastewater treatment plant for the provincial capital of Solola is under study by the EEC, according to Congressman Diaz Chay.

HAITI

Agriculture Ministry To Promote 'Green Plan' for Country

FL1407155792 Port-au-Prince Radio Soleil Network in Creole 1100 GMT 14 Jul 92

[Text] Minister of Agriculture Jacques Baker has announced that the ministry he is heading will set up a plan aimed at turning all the territory of the country green in the near future. Baker, in an interview with Radio Metropole, said the purpose of the green plan is to link the ecology of the mountains to the ecology of the plains and to improve the country's agricultural production so the farmers can have a better standard of living. The minister of agriculture admitted that a green plan requires much time to become a reality in a country like Haiti, but that the Ministry of Agriculture will use the time at its disposal to do its best to achieve this goal.

Baker asserted that his ministry will focus on three phases of the emergency plan announced by the government over the last few weeks while the Ministry of Agriculture prepares all files required for the realization of the green plan. These plan includes a social phase, an ecological phase, and a phase relating to small enterprises.

Asked how the government will finance the green plan, Baker pointed out that international aid to Haiti has never been used properly. He added that he does not worry about where the money will come. In his opinion, more important is the manner in which the available resources in the country are being used.

Thanks to the commitment he has made to his post, Minister Baker has managed to motivate the agronomists working in the Ministry of Agriculture. He believes the same motivation exists within all the Haitian people. When asked whether he is afraid that someone at the Ministry of Agriculture might try to sabotage his plans, Jacques Baker answered that it is always easy to disrupt what is not good but that given the country's current situation, no one should consider sabotaging what is good.

HONDURAS

Destruction of Forests Hondura's Main Ecological Problem

92WN0632A Tegucigalpa EL HERALDO in Spanish 6 Jun 92 p 24

[Article by Juan Ramon Duran: "A Green Honduras by the Year 2000 Is Only a Pipe Dream"]

[Text] Honduras urgently needs an economic injection of some 5 billion lempiras to prevent 700 species of animals from becoming extinct and 40,000 hectares a year of forests, plus its marine resources, from being destroyed, according to Franklin Bertrand, director of the National Environmental Commission (CONAMA).

The tragedy is that just as much money is also needed to solve the Honduran people's health, education, and cultural problems, but the two situations are equally important and very closely related.

The Basic Problem

According to Anduray [not further identified], Honduras' major ecological problem is the destruction of its forests, because 75 percent of the country's natural wealth lies in its forest resources. Pressure is exerted by

peasants trying to meet their basic needs and by farmers and ranchers who are naturally trying to expand their production.

"All the agricultural sectors are forgetting a fundamental thing, and that is that the forest produces water for human consumption; it irrigates, and it generates energy, which we all need," Anduray said emphatically.

In this context, he is advocating the sustainable development of the forests, without destroying, damaging, or degrading them. This requires a farsighted view of our forest resources. We must not think in terms of short-term benefits, but of preserving an asset that is related to the survival of all Hondurans in the coming decades.

Privatization of the Forests

Anduray said that to privatize the forests will require tremendous cultural development. The benefits will not be apparent immediately, as in agriculture and animal husbandry, because it is a very long-term investment.

The manager of the Honduran Forestry Development Corporation (COHDEFOR), Porfirio Lobo, argues in favor of privatizing the forests as a way of ensuring that small and large farmers not only preserve them, but reap the benefits as well.

According to official figures, Honduras has 11 million hectares of land, of which there are still 2 million hectares covered with pine forests and 2.5 million with broad-leaved trees, called hardwood forests by the experts.

"The poverty of the peasants is the forest's number one enemy, because they are destroying the forest in an attempt to survive. But there is an aspect of fair compensation involved here," he added.

At the other extreme are those who are selfishly seeking immediate profit and want to gain immediate wealth from the forests.

State of Siege

Whether we like it or not, as part of this process, rural areas began a kind of state of siege on Honduran cities where large numbers of people are concentrated.

Tegucigalpa is an example of this. Ten years ago, it had an abundant water supply and a pleasant climate, but today water shortages, heat, and pollution are its main features, although this is something that the people are pained and ashamed to have the foreigners who are courageous enough to land at Toncontin airport see.

President Rafael Callejas, in an unprecedented act, changed the headquarters of government to another place, away from the bad smells and mosquitos produced by the Choluteca River, a former source of inspiration for bards, poets, and drunks.

There are similar pressures on the main industrial center, San Pedro Sula, and other cities. Nobody can escape this new and troubling phenomenon, which requires courageous, far-reaching action.

The Environmental Alarm Has Sounded

Anduray said that this has been a concern for the past few years and proof of this is found in a series of projects to protect and preserve the environment.

Unfortunately, these projects have displayed some basic Honduran traits: Carelessness, personal and professional feuds, cheap political tricks, and the failure to take coherent, coordinated, and systematic action.

Fortunately, President Callejas's administration established CONAMA and the Vida Foundation to coordinate political activities and ensure a coherent position on environmental problems.

Thus CONAMA's functions are to define general strategies and policies, compile profiles on environmental projects, and take action to prevent ecological deterioration.

As part of this process, developing environmental awareness, something many sectors of society are committed to, is beginning to bear its first fruits.

Outside assistance from the UN system and private and governmental organizations has begun arriving and providing intensive support for projects and desires and concerns to preserve the environment, because this is a problem "that has no boundaries. There is an inevitable equilibrium between Central America, as a biological bridge in terms of biodiversity and protection of forests, and North and South America."

Environmental Law

Although Honduras does not have a state secretary for the environment on the same footing as the secretary of health and education, moves are being made in this direction.

The work of CONAMA and the Vida Foundation, plus the heroic efforts of various private development organizations and the work of "environmental fundamentalists," has begun to bear its first fruit: We must take care of the environment at any cost, setting aside the traditional interests of individuals and groups.

CONAMA's director said that the General Law of the Environment is directed at this effort. It creates the concept of ecological crime and the idea of the sustainable development and exploitation of natural resources.

This law moves away from the idea of the strict conservationist who rejects everything, and it opts for a rational approach to developing natural resources, one that ensures that future generations will have a reasonable and "livable" ecosystem.

Halting Desertification

When the southern part of Honduras showed the first rational signs of desertification, the water shortage began to be felt, and the heat became suffocating, Hondurans realized that they needed to take action here and now.

Anduray defended the idea of coordinated environmental action, as well as other fundamental issues.

"If the interests of those who defend survival, economic benefits, and other causes are not coordinated, everything will be lost."

NICARAGUA

Chamorro Installs National Commission on Protected Areas

PA1207190492 Managua BARRICADA in Spanish 10 Jul 92 p 6

[Report by Nohelia Gonzalez]

[Text] On 9 July, President Violeta Chamorro installed the National Commission on Protected Areas [Comision Nacional del Sistema de Areas Protegidas]—SI-A-PAZ—and recommended that the project be implemented with responsibility because it "represents the first major attempt at territorial ordering in Nicaragua."

President Chamorro stated the project came about in 1990 during the Puntarenas Presidential Summit, with the objective of conserving the natural and historical patrimony of the San Juan river to transform it into a tourist, educational, recreational, and social development center.

In addition to President Chamorro, the commission is also presided over by Jaime Incer, National Resources and Environment Institute minister director, and Jaime Granera, agriculture and livestock vice minister.

The SI-A-PAZ commission is also formed by Jose Boanerges Matus, minister director of the Nicaraguan Agrarian Reform Institute, and Virgilio Cossi, regional delegate of the Natural Resources Protection International Union.

Mrs. Chamorro also indicated the commission's mission will include the conservation of the river basin to promote quick travel between the heavily populated regions of Nicaragua and the Caribbean Sea. In addition, the commission will be responsible for the development of economic opportunities for these population centers.

The Nicaraguan president indicated that the commission also intends to control illegal activities, such as the trafficking of lumber, wild life, and archaeological objects. These illegal activities have been taking place for several years along the border region. During an improvised news conference, President Chamorro regretted the request made by Vice President Godoy to fire Presidency Minister Antonio Lacayo. She added that "it is a shame that he has been unwilling to work."

PANAMA

Ecology Commission Concerned Over Possible Radioactivity in Canal

PA2707032892 Panama City Telemetro Television Network in Spanish 1730 GMT 24 Jul

[Text] The Guatemalan National Ecology Commission has expressed its concern about the possible existence of radioactivity in the Panama Canal due to the passage of ships carrying nuclear waste. The Central American Parliament and Greenpeace recently reported this situation.

VENEZUELA

Official on Lake Maracaibo Pollution

92WN0633A Caracas EL DIARIO DE CARACAS in Spanish 9 Jun 92 p 10

[Article by Marco Tulio Socorro]

[Text] Suddenly, grayish green algae multiply over the water surface. It becomes dark underneath.

Then, the bank of algae begins to die. It disintegrates, covering the bottom with organic matter that, on decomposing, uses up all the oxygen. Plants die; fish flee. Fetid gases rise, and innumerable colonies of worms appear among the floating leaves.

This is the daily reality in Lake Maracaibo. It is the lake's way of "physically registering" the assault that it is subjected to by each and every one of its tributaries. It is also its way of warning that something very serious is happening, because not all of the destructive processes that it suffers are so obvious.

Naturally, if any subject is of concern to the University of Zulia [LUZ], it is the environmental crisis of the lake and its hydrographic basin. Its libraries contain more than 300 research studies that measure deterioration, point out the causes, and propose solutions to some of the problems.

But the contaminating area is much broader than LUZ. It includes hundreds of industries, thousands of livestock farms, groups of guerrillas and drug traffickers, and some 4 million persons who, without realizing it, make an important daily contribution to the ecocide.

According to Lenin Herrera, secretary of LUZ and aspirant to be the rector, the problem exists because the entire country has been constructed in total anarchy.

As a sanitary engineer with a graduate degree from the United States, Herrera has devoted years to the study of the environmental crisis in the Lake Maracaibo basin. In

more than half of the works on the subject, his name appears as a source if not as instructor.

Herrera heads the Zulia Environmental Foundation (FAZ) and directs the "Lagoon Stabilization Pilot Project for the Reuse of Water for Irrigation," which seeks solutions for excessive dumping of domestic wastewater.

Let Those Responsible Pay

"The lake is the cesspool where all the pollution generated by productive as well as urban usages is sent," Herrera explains. "Its natural capacity for recuperation is overloaded, and therefore its progressive deterioration is accelerated with the increase in economic activity and demographic pressure in its basin."

What is worse, those directly responsible for the imbalance casually wash their hands of the environmental damage. "The state is indebting itself to Canada and Israel for the construction of treatment plants for Maracaibo and the cities on the eastern shore of the lake. In other words, the state ends up paying the cost of the pollution, and at international prices, because the credits have to be repaid in dollars."

[EL DIARIO DE CARACAS] It is like a subsidy for the producers who destroy the environment.

[Herrera] Exactly. That is why we must have an ecological tax, through fiscal policy.

[EL DIARIO DE CARACAS] Would not that be simply to tax the destruction of the environment?

[Herrera] At least it would be a way of limiting pollution. An ecological tax would serve to make the productive activities that harm the environment pay for environmental research and rehabilitation programs related to those activities.

[EL DIARIO DE CARACAS] Is not the Environmental Penal Law supposed to do that?

[Herrera] That law has many weak points because it was designed for a situation different from ours. If it were to be applied, the petrochemical industry opposite Maracaibo would undoubtedly have to be removed immediately, because it is a permanent cause of pollution for the city. The activities of many livestock farmers, who use pesticides and dump their residue into the lake, would also have to be suspended. The lake was constructed in a state of anarchy as far as planning for use of resources is concerned, and the situation can not be corrected with a single law. [end Herrera]

Herrera believes that, contrary to what might seem to be the case, the ecological tax would have favorable economic results, not only because the country could do the basic research necessary to legislate effectively on use of resources, but also because of the multiplier effect of investments in environmental rehabilitation.

"Economics and ecology are two complementary sciences. For example, if a treatment plant is to be built, what economic benefits will it produce? You have to begin to make a list: if the lake is rehabilitated, the value of coastal lands rises. Reducing sources of pollution also causes the public health indicators to improve and worker absenteeism to go down, for a favorable effect on productivity. And in the third place, improving the aesthetic value of the coasts opens up possibilities for economic activities related to recreation, which today are the most profitable."

[EL DIARIO DE CARACAS] You mean that, although the state incurs debt to do it, the investments it makes pay for themselves.

[Herrera] Yes. The problem is who is going to receive those benefits. The people, of course. But the pollution is caused by others, and they must pay for it. Rehabilitation cannot continue to be paid for only by the state. [end Herrera]

More LUZ

Lenin Herrera's obsession is the absence of reliable date about the functioning of this complex tropical ecosystem that covers Venezuela. This is a weakness that forces us to legislate and administer based on standards provided by countries with different physical characteristics. Hence the need to obtain material support for research, even if by taxation.

Up until last year, he says, the University of Zulia had some 315 basic research studies on the Lake Maracaibo basin. All these projects were carried out exclusively with the university's assigned budget.

"The ideal would be not only that the university have a decent budget, but that the law require that whenever a development project is proposed or infrastructure built, there be a budget allocation for studies of the resulting environmental impact," Herrera says.

Naturally, the university must also commit itself to improving its effectiveness as a provider of solutions.

"These 315 studies do not start out from a common plan or from a position of looking for integral answers. The university has to be systematic, with a research program that covers priorities in the basic areas: biology and chemistry, and in storing information. Every thesis should be done in response to a specific need and to personal initiative."

Herrera offers an example of an integrated research program: the lagoon stabilization pilot project for the reuse of water for irrigation, which includes 12 areas of research, with personnel assigned to each area.

The purpose of the project is to find the best way to adapt certain wastewater treatment systems, based on very low cost technologies that use the sun and wind as energy sources, to the conditions of the country.

The lagoons were built in the center of LUZ's university city and filled with water diverted by researchers from a sewer system. The fluid is passed through a special system to measure its flow. Then part is treated in the lagoons, and the rest is allowed to run its normal course.

The treated water will be used to irrigate 17 hectares of the university city, two of them devoted to experimental crops, "to see how these crops respond to the water, in these soils that are not very good."

"The project is going to set the working standards for all of these systems in Venezuela," Herrera says. "We are measuring things that until now have been ignored in this country, such as, for example, the contribution per capita of residual waters, which is an important statistic for engineering projects."

The project, begun by Herrera six years ago, has been supported by Corpoven [a subsidiary of Petroven], the Polar Foundation, the Zulia State government, Hidrolago, and the Institute for Conservation of Lake Maracaibo Basin (Iclam).

The research has already determined, for example, that the flow of water does not diminish at night, when use supposedly declines, which indicates the existence of innumerable leaks.

[EL DIARIO DE CARACAS] Does not following one line of research give priority to some areas at the expense of others?

[Herrera] Because of its budget, the Venezuelan university does not have funds for everything; it must have priorities. The University of Berkeley, which enjoys multimillion dollar budgets, has as its policy not to try to do everything, but to concentrate its resources on specific areas, in order to be at the leading edge at world level.

[EL DIARIO DE CARACAS] In your opinion, on which areas should LUZ concentrate?

[Herrera] Environmental technology and the basic sciences related to the region's renewable resources: microbiology, molecular biology, genetics, immunology, botany, all the sciences related to what will be the industrial processes of the future. [end Herrera]

[Box, p 10]

Everybody Versus the Lake

The waste waters from Maracaibo, Cabimas, Ciudad Ojeda, and the other coastal communities flow directly into the lake. Those from Merida, Valera, San Cristobal, Cucuta, and other Andean cities reach the lake via rivers, whose waters—contaminated by enormous quantities of bacteria, viruses, parasites, and fungus—are used to irrigate truck farms.

According to Lenin Herrera, in Lake Maracaibo there are concentrations of fecal coliform bacteria 600 or 700 times greater than the maximum levels permitted by the World Health Organization. As a result, the State of Zulia has the highest rate, after Amazonas, of infant mortality due to waterborn diseases.

Residual urban waters are rich in phosphorus and nitrogen compounds, which are found in detergents, fecal waste, and urine. When they reach the lake, they fertilize banks of algae that, on decomposing, become covered with worms and capture the oxygen, impeding the passage of species that need to travel from fresh to salt water, and vice versa, in order to reproduce.

The lake also receives unknown quantities of heavy metals, such as mercury, vanadium, lead, and chrome from industrial plants. Herrera says that from the refineries at Paraguana the winds bring to the lake compounds of sulphur, nitrogen, polyaromatic hydrocarbons, particles of heavy metals, and the highly cancer-producing alphabenzopyrene.

"We are talking about substances able to induce not only chronic diseases, but also genetic malformations during gestation, in humans as well as in animals," Herrera warns.

REGIONAL AFFAIRS

Tangier Conference Assesses Threatened North African Environment

92WN0663A Casablanca LA VIE ECONOMIQUE in French 3 Jul 92 p 47

[Article by Jamal Amiar: "Experts Sound the Alarm on Maghreb Environment"]

[Text] Twenty-six researchers and academics from the United States, Morocco, Algeria, Tunisia, and Mauritania met in Tangier from 22 to 26 June for a conference on "the threatened North African environment, environmental protection, and economic development." The conference was funded by two American organizations—the National Science Foundation and the Agency for International Development [USAID]—and organized by the American Institute for North African Studies, which has offices in Washington, Tunis, and Tangier.

Over a period of nearly five days, speakers raised many facets of the Maghreb's ecological problems, noting that economic programs in our region give very little consideration to environmental realities.

Algeria is a victim of desertification; Tunisia is losing 10,000 hectares of soil every year due to the mechanization of agriculture; the deterioration of the environment in Mauritania is such that "it threatens the country's survival," according to Dah Sahili, an official of the Ministry of Rural Development in Nouakchott; and Morocco's "lack of legislation to protect the environment is startling," said Professor Mohamed Bedhri from the University of Oujda.

Those are a few of the existing signs of environmental deterioration in the Maghreb, a region that—a half-century ago—the colonizing French had likened to California.

But, against the backdrop of the recent Earth Summit in Rio and the growing ecological movement around the world, North Africa in 1992 seems to be taking its time preserving and protecting its natural endowment.

Water treatment is practically nonexistent in the Maghreb, except in Tunisia. Efforts to develop tourism are focussed exclusively on achieving maximum occupancy at hotels. Vehicle emissions controls are absent. These problems, it was noted by the participants at the conference, are heightened by timid policies in population control and redistribution of wealth.

A Complete Lack of Prevention

The problems raised at the conference in Tangier are all shared to some degree by the countries of the Maghreb. A classic example: Visit the outskirts of Algiers, Tunis, Tangier, Agadir, or Marrakech and you will see open trash dumps and discarded plastic bags, lofted by the wind, hanging from the trees.

The attitude of "Why care about what happens after my time?" takes a serious toll in very important areas, particularly in farming and in water resources.

In that vein, Professor Driss Fassi of the geography department at the University of Mohamed V in Rabat addressed the subject of "soil depletion in areas of central Morocco where farming was recently mechanized." He brought out problems that could threaten the development of Moroccan agriculture in the long run.

The Sais Region, Yesterday and Today

According to Professor Fassi, "alarming imbalances have appeared" in the Sais region, a very fertile area nearly 90 km long and 35 km wide in which the cities of Fes and Meknes are located.

Excessive mechanization and poor use of water resources have brought about a decrease in farm yields in the Sais region, particularly in the vicinity of Meknes, said Prof. Fassi. Generations of farmers in the region have cultivated fruit, wine grapes, olives, and other produce, but it is becoming increasing difficult to balance rising human needs and available natural resources.

Among those natural resources, Driss Fassi cited the "problem of water that is, indeed, available from several sources, but users are increasingly sharing the same source." Large farms draw water upstream and water must be supplied to the cities of Fes and Meknes downstream. This leaves nothing for those in the middle.

In his presentation, Prof. Fassi also pointed to a recent phenomenon of soil depletion in the Sais region: Fences surrounding plots of land prevent clay and natural nutrients from penetrating the soil through water drainage. This phenomenon affects the sandy soils of the Meknes region in particular. The fences form a barrier to surface enriching agents and could eventually lead to instances of barrenness.

When asked whether other regions of Morocco were experiencing problems similar to those in the Sais, Professor Fassi answered that "if the areas of Fes and Meknes are affected by these problems, other regions certainly are."

Where Is the Legislation?

Prof. Mohamed Bedhri of the Oujda law school believes that the problems of resource management and the imbalance between needs and available resources can be traced back to the absence of appropriate legislation in Morocco. According to Prof. Bedhri, although an ecological awareness is emerging in Morocco and the need for environmental protection is becoming apparent, there are practically no laws to protect the environment, and those which do exist are either ill-suited or contradictory.

On the subject of "the inadequacy of Morocco's environmental laws to meet its ecological challenges," Prof. Bedhri noted that a new administration-sponsored bill

on the environment, drafted in 1985, is waiting to be submitted to Parliament, and sector-specific bills also exist for water, maritime resources, and urban planning. But these are merely bills. According to Prof. Bedhri, "a provision guaranteeing the right to the environment in Morocco was to have been introduced in the constitutional reform of 1972." The rights of future generations do exist somewhere, even though the Rif region has no cork-oaks left of the 8,000 hectares that existed in 1980. "Kif" is now cultivated in place of the cork-oak.

Regional Coordination

One of the most important results of the meeting, beside the information and analyses exchanged, is that it launched contacts at the regional level.

From Nouakchott to Tunis, the problems are very similar, and discussions have begun on the need to encourage the creation of a regional data base and gene bank.

Joint studies are also to be launched. In that regard, the Tunisians have a head start over the other countries of the region. Their water treatment policy is a reality, and Tunisia has laws protecting the environment as well as an environmental protection agency. The Tunisians realized that by taking care of their environment today, they would make gains in their future economic competitiveness.

What the Tunisians are already doing could serve as an excellent rallying point for a renewed effort to build the foundations of North African integration.

EGYPT

Bill Restricts Smoking, Factory Emissions

92WN0637B London AL-WASAT in Arabic 25 May 92 p 46

[Unattributed report: "Egypt Bans Smoking in Public Places, Cinemas"]

[Text] The Egyptian Government has drafted legislation banning smoking in public means of transportation, cinema houses, and closed-in places. The draft bill also includes requiring factories to take adequate measures to keep pollution levels within acceptable rates, in addition to protecting workers by providing guarantees for their general safety and health.

In accordance with the new law, existing industrial establishments will have 18 months to obtain and use adequate equipment to deal with their polluting emissions, provided that government agencies ascertain that this equipment can be safely used, and conduct periodic analyses of pollution levels.

The bill sets penalties of up to withdrawing licenses and shutting down organizations that do not comply with government directives.

This draft bill, which presumably will be debated by the Egyptian People's Assembly (Parliament), includes measures to reorganize the activities of ships and oil tankers inside Egyptian harbors and territorial waters. It imposes penalties of up to seven years detention and a fine of $250,000 for ships in violation.

The new bill is within the framework of a government plan to combat the danger of increased pollution from factories, because of their noncompliance with adequate measures to end dangers to the health of citizens.

Institute Participates in Mediterranean Pollution Study

92WN0637A Cairo AL-AHRAM AL-DUWALI in Arabic 14 Jun 92 p 5

[Unattributed report: "Egypt Participates in Pollution Study of Coasts of Mediterranean Basin Countries"]

[Text] The National Institute of Maritime Sciences and Fisheries in Alexandria is participating in international scientific efforts to study the spread of waste materials along the coasts of Mediterranean basin countries, which threatens to pollute them, as well as endanger man's health.

Dr. 'Ali Baltanji, the institute's director, stated that despite the fact that, so far Egypt's coasts have not been subjected to this phenomenon to any great degree, institute experts are busily engaged in conducting a comprehensive survey of the coastline, in order to take necessary precautions. This is within the framework of a project to monitor pollution in the Mediterranean basin, which is supervised by a UN environmental program, in cooperation with several other international agencies, including the World Health Organization, UNESCO, and the World Meteorological Organization.

INDIA

Plan Envisions Decentralization of Natural Resource Control

92WR0384A New Delhi PATRIOT in English 27 May 92 p 5

[Text] A "major decentralisation of power" will be the hallmark of the Eighth Plan in the environment sector, reports UNI.

According to the Plan document, a major initiative in decentralising power would be taken during the plan period (1992-97) to enable the villagers to decide for themselves their own priorities and to take up activities accordingly.

Research activities would also be reoriented to make them more appropriate for the needs of the local inhabitants, the document stresses.

Underlining the importance of the decentralisation process, the document concedes that no Government could

protect, regenerate and ensure sustainable use of natural resources on its own. "It is essential, therefore, to decentralise control over natural resources."

Explaining that decentralisation in the real sense meant "transfer of control from the Government to the people" collectively, the document says "it is important that conditions should be created for effective management through creation of appropriate local bodies and institutional structure."

The document stresses that the people must also have access to information and professional knowledge and must be able to call upon technical bodies for advice and support.

Such an approach is even more necessary in the case of tribals and other communities who are traditionally dependent on natural produce, it says.

The document, while conceding that the state of the country's environment and ecology was bad and continued to cause concern, regretted that professional bodies, of late, had become more distanced from the people.

Asserting that environmental training and education of professionals and administrators was crucial to the establishment of an enviornment-friendly social system, the document says that another thrust area would be the pursuit of economic development without being socially and environmentally destructive.

The document also says that the critical condition of natural environment demanded that a system be set up for constant monitoring of important parameters and since quick preventive action may often be necessary, the monitoring machinery must be comprehensive, have access to critical information, be regular in its assigned role and have the capacity to enforce strict adherence to the rules.

Concerted efforts would also be made to internalise environment related costs and benefits into the "calculus of viability." Suitable methodology for quantifying environment costs and benefits would be developed.

The document also says that efforts would be made to ensure coordinated Government action. A strategy to achieve optimally the irrigation targets by minimising ecological damage, development of appropriate technologies for reducing siltation of dams, promotion of afforestation, conservation of water and research in alternative water harvesting technologies would also be formulated.

For energy, the action points would be conservation, development of mini-hydel generation capacities and environmental management of thermal, hydro and other energy programmes.

The action points for agriculture and rural development would include minimising the use of adoption of ecologically regenerative land and water use.

In industry, integrated action would be needed for prevention and control of pollution hazards, suitable location of industrial units, recycling of industrial wastes and adoption of energy-efficient technology.

Elaborating on the eight-point strategy to meet the challenge posed by the massive environmental degradation, the Plan document spells out eight points:

—a detailed report should be prefared in identifying the sources of pollution by the project or activity and indicating in a realistic and time-bound manner, the measures required to be taken;

—a similar report should be prepared about domestic and agricultural pollution, especially from pesticides, locating sources and suggesting remedial measures;

—functioning of the central and state pollution control boards should be strengthened and be made more open;

—comprehensive and realistic standards should be formulated for environmental pollution, for procedures and standards for assessing environmental;

—industries should be made to recognise, if necessary by a dialogue with the Government, and be persuaded to show greater leadership and responsibility by controlling pollution ab initio through built-in measures;

—public participation and involvement of NGOs in prevention and control of pollution and environmental degradation should be facilitated by providing necessary technical help, through designated institutions, obliged to provide information and technical advice, and by the Central, State and local governments setting up appropriate machinery for a speedy response to investigation and disposal of public complaints.

Bengal Districts Struck by Arsenic Pollution

92WR0383A New Delhi PATRIOT in English 4 Jun 92 p 5

[Text] Calcutta, June 3 (UNI)—About 500,000 people in six West Bengal districts are victims of acute arsenic poisoning which causes serious diseases and even death, says an environmentalist.

People suffering from arsenic pollution develop hyper pigmentation (numerous black spots on the body—mainly chest, face, neck and back), hyper keratosis (pea-sized small lumps on the flesh), cirrhosis of the liver, drowsiness, inflated eyes and dematosis. Death occurred in acute cases, according to internationally-acclaimed environmentalist Dipankar Chakraborty.

Besides the seriously affected victims, several hundred thousand, others including women and children are prone to arsenic poisoning in different blocks of the six districts, he said.

Dr. Chakraborty, who led a seven-member expert team of Judavpur University's School of Environment Studies, felt the situation was so alarming it should be handled on a war footing. The present cases of arsenic poisoning were thousand times more devastating than the infamous minamata mercury pollution incident in Japan in the 60s where only a few hundred people were seriously affected, he added.

Both minimata and the present arsenic episode were cases of chemical contamination, Dr. Chakraborty said adding that the difference lay in the fact that minamata was due to industrial pollution whereas the source of arsenic in the districts was yet to be established.

The study revealed an alarmingly high arsenic content, much above the World Health Organisation permissible limit, in the ground water in the districts of North 24 Parganas, South 24 Parganas, Burdwan, Malda, Murshidabad and Nadia.

The population of the contaminated areas was consuming on an average about 20 times higher arsenic than the permissible limit of 0.05 mg per litre.

The study did not, however, consider arsenic poisoning from food and the environment which together might contribute a high amount.

Citing specific examples, Dr. Chakraborty said five brothers out of six died of arsenic poisoning at Bagdipara in Nadia district. The sixth was counting his last days. People have stopped marrying their daughters to youth of Kamarpara in Malda district as hundreds of them became invalid and finally died of arsenic pollution during the past ten years, he said.

Evidences of chronic dermatosis were located in 62 out of 67 families who drank contaminated water.

The environmentalist said unless proper precautions were taken immediately, more people would be affected from arsenic contamination. Thousands of hectares of land would also be affected.

Locating alternate sources of water, boring deep tubewells (at least 1,000 feet deep) and developing inexpensive systems to remove both arsenite and arsenate from contaminated water could solve the problem to a great extent, he said.

Dr Chakraborty said his team had devised a simple cost-effective system to purify water. Arsenic was usually found within the water at depths ranging between 70 and 400 feet in the districts.

Detailing the water treatment system, developed at the school of environmental studies, Dr Chakraborty said initial cost of the system would be roughly Rs 50. Average yearly expense for treatment of ten litres of water per day would be around Rs 25. The system produced arsenic-free drinking water.

He regretted that the work done so far to study the arsenic in ground water in the six districts was negligible. Experts and officials visit only those areas where arsenic poisoning on the body was visible and only from where information could be received. The manifestation on the body was at the late stage of arsenic toxicity, he added.

Arsenic poisoning in ground water was, however, not a new phenomenon. Many countries suffered from the problem. But compared to other countries the effect in West Bengal was much more devastating. The sufferings of the people here were more as most parts where arsenic was found were poverty-stricken and people suffered from malnutrition, a very important factor.

Prime Minister Rao Assesses Earth Summit

92WN0657A Madras THE HINDU in English 15 Jun 92 p 1

[Article by Nirmala Lakshman; quotation marks as published]

[Text] Rio de Janeiro, June 14—"The environmental aspect will loom larger than before in our planning processes," said the Prime Minister, Mr. P.V. Narasimha Rao, speaking to the Indian press at the close of the Earth Summit here today. Our planners have seen it as a hurdle but now it will become a part of planning itself, said the Prime Minister.

Mr. Narasimha Rao said what was most remarkable was that this was the first summit to agree on the basic principles although "shades of difference may exist in operational parts." Mr. Rao said though there were differences in problems and approaches the common concern of all was reflected here at the United Nations Conference on Environment and Development.

Mr. Rao said what had happened at Rio was only the beginning of a process. A lot of good-will and good intention had been seen here and the mechanism to deliver the goods would come, he said. In response to a question about India's role in the Summit, Mr. Rao said the most important achievement for the country was the fact that its approach had been endorsed. India is acknowledged as an "activist" country in its role in environment protection, he said.

Mr. Rao said he did not foresee any insurmountable obstacle for any of the issues emanating from the conference. In fact, we have a lot to do now, he said. Elaborating that India has to do a lot more than it has done so far, the Prime Minister said "we cannot talk about a lack of money until we have begun to do something."

"It is also not a question of readymade environment-friendly technology being available with the industrialised nations and not with us," he stressed, saying that North nations were also experimenting with new technology approaches which was why joint research and much planning was important.

Bush's stance: Mr. Narasimha Rao, refused to be drawn into any specific criticism of the U.S. President, Mr. George Bush's stance at the Earth Summit. "What we are concerned with is the sum total of what happened here," he said, adding that though Mr. Bush refused to sign the Biodiversity Convention, he had promised to go beyond the treaty in substance.

Mr. Rao said he was satisfied that the view of developing countries had found great acceptance. He did not view the 0.7 per cent of GNP as ODA assistance for environmental programmes as a sacrosanct figure because one does not know how much will really be required, he said. Overall, the financial resources for Agenda 21 had been accepted as a common responsibility and that was the main issue, he said.

Mr. Rao also said that he had discussions with the Chinese Premier, Mr. Li Peng on environmental issues and that India, China and Brazil were on the same wavelength in regard to issues of environmental protection and development.

Main success: Earlier at a press conference with the international media, Mr. Kamal Nath, Union Minister for Environment and Forests, said the main success of the conference lay in the fact that environment and development were now on the political agenda of every nation and that poverty and development had become the central themes. He said the momentum gained here would be followed up by a series of actions on the conventions, Agenda 21 and the forest principles.

The Rio Declaration encompasses "the greatest concerns of developing countries," said Mr. Kamal Nath and added that the ten days of the conference transcended "the orbit of everyday politics." It was in fact an "orbit of partnership and common concern." When asked what would now be the priorities for India, Mr. Kamal Nath said adequate environmental legislation and regulation already existed in India and "we will go ahead on the path we have already set for ourselves."

He outlined areas for continued environmental action such as wastelands, a national river action plan, developing environment-friendly technology and renewable energy sources.

ISRAEL

Al-Yarmuk Waters Diverted to Galilee With Jordanian Consent

TA1407090992 Tel Aviv HA'ARETZ in Hebrew 14 Jul 92 p 5

[Report by Hayim Bi'or]

[Excerpts] For several days Israel has been diverting into the Sea of Galilee part of the al-Yarmuk River which flows across the Israeli-Jordanian border. The action is being taken with the knowledge of the Jordanians and following an agreement between the two countries, according to sources involved in the matter.

Jordan recently changed its stand which had rejected diverting the al-Yarmuk to the Sea of Galilee. In the past, King Husayn and his brother, Crown Prince Hasan, warned Israel against "a water war" over the use of these waters.

So far, the Jordan Valley water association, owned by the kibbutzim and moshavim in the region, has poured 3-5 million cubic meters of water into the Sea of Galilee at the instruction of Professor Dan Zaslavsky, the water commissioner.

Zaslavsky's order was handed down despite the fact that the lake is currently only 8 cm below its maximum water level, an exceptional occurrence for this season. Hydraulic engineers believe that the lake's level will be only about 15 cm lower by the end of the summer and will overflow already in the first half of the winter.

Meqorot, which supplies two-thirds of Israel's water needs, expressed surprise yesterday over the water commissioner's decision to divert the al-Yarmuk into the Sea of Galilee despite the concern that it will overflow onto agricultural lands and adjoining tourism sites. [passage omitted]

Avishay Amir, spokesman for the water commission, said yesterday in response that pumping water from the al-Yarmuk and diverting it to the Sea of Galilee is designed to solve local problems, but refused to say what these are. He said that the water commission is aware of the level of the Sea of Galilee at all times and that the highest level of pumping from the lake takes place in July and August. [passage omitted]

Nation's Environmental Policy Reviewed

TA3107163492

[Editorial Report] Tel Aviv MA'ARIV in Hebrew on 31 August carries an article by Avner Brenheimer on pages 2, 3, and 4 of the SHABAT supplement entitled "Environment Without Quality." The article deals with the current situation of environment protection in Israel. Brenheimer reviews the Environment Ministry's policy and examines several aspects of the problem.

The Environment Ministry's budget today stands at 30 million shekels, which is "less than one percent of the state budget," Brenheimer says. The ministry was set up four years ago after years in which "the issue of environment protection had been shamefully neglected." Brenheimer lists several reasons for this, the first being the lack of public awareness. The second reason, stemming from the first, is "the absence of a policy of supervision and law enforcement." The third problem is distribution of authority. The water problem, for example, which is mainly the result of improper maintenance and lack of policy, is largely due to the fact that "in charge of the

quality of water in Israel are the Meqorot Water Company, the Health Ministry, the Water Commission, and the local authorities."

The fourth problem is that the Israeli standards are not strict enough, mainly because applying strict standards would require costly changes in structure of factories, use of chemicals in agriculture, and so forth. According to Brenheimer, however, this will apparently change because the developed world has adopted strict regulations regarding the countries from which it imports goods and "Israel will not be able to afford to stay out and not recognize the new rules of the game."

Brenheimer moves to examine the various aspects, starting with water, "which is the most problematic in Israel, where water quality is constantly declining. There are two main reasons: Excessive pumping and contamination of various origins." He than reviews Israel's three main water sources: "Lake Tiberias, the smallest; and two underground reservoirs: the coastal aquifer, stretching from Hadera to Gaza, which is the largest; and the mountain ridge aquifer, stretching from Nabulus to the Beersheba Valley." The largest reservoir is at a bad state, Brenheimer says, even after last winter, which was very rainy. This is largely due to the fact that waste waters are not being cleared. Except for the Dan District, there is a shortage in sewage purification installations throughout the coast and Israel in general. Local authorities prefer to spill the waste waters into the rivers rather than construct purification plants, and the Interior Ministry "is not really concerned with enforcing the existing laws." The article adds that the mountain ridge aquifer, which contains Israel's best drinking water, is deteriorating as well because "the Judaea and Samaria sewage from the Jewish and Arab settlements, with no national discrimination, runs into it through the river beds."

The worst situation is observed in several underground reservoirs in the Negev. The upper reservoir, which in the past contained millions of cubic meters of drinking water, is at a "terminal stage, after the Makhteshim Factory's poisonous waste destroyed it." Beneath it lies a salty aquifer, and under it another—used by the Beersheba residents. This latter aquifer, which was considered sealed from the second one, has recently been found to absorb waste.

Referring to waste, Brenheimer says that Israeli residents produce 2 billion metric tons of waste annually. This type of waste, largely nontoxic, is disposed of in "several hundred dumps." Environment Ministry officials say that "some 98 percent of the waste reaches the dumps while only 2 percent is recycled, and only 1 percent of the dumps comply with the ministry's criteria." The ministry has been trying to map the dumps. It wants to leave open 25 properly setup dumps and close all the others. This goal is still far from being realized because of a lack both of funds and affordable locations.

Waste recycling, as noted, is very poor. For example, only 1 percent of glass waste in recycled in Israel, in comparison with some 40 percent in Europe, and only 25 percent of paper waste is being recycled. While European countries have become very meticulous in segregating waste, "no one in Israel cares about that." The ministry has launched several relevant activities, such as surveying the situation and promoting legislation.

The national toxic waste dump is on the Hovav Plateau in the Negev. There are eight plants on the site dealing with the chemical treatment, burial, and storage of toxic waste. Reviewing the history of the site and citing state and private companies and societies, Brenheimer claims that the situation there "borders on irresponsibility."

The article goes on to review the situation of Israel's beaches and seas. Brenheimer says that in 1991, the Environment Ministry—which is the authority in charge of dealing with and preventing sea contamination—dealt with 50 cases of oil spills: 34 in the Mediterranean, 14 in the Gulf of Elat, and two in Lake Tiberias.

The law banning the spill of waste into the sea is not always enforced. As a result, all of the Coastal Plane rivers, with the exception of the Yarqon, Taninim, and Lakhish Rivers, are contaminated and carry waste to the sea. "The beaches are not unusually contaminated, but they are not very clean either," the article says.

On the positive side, Brenheimer adds that "an campaign of strict law enforcement has managed to reduce significantly the contamination of shores with tar. The fact is that not a drop of oil has made it to the Elat marine reserve over the past six years."

Referring to air pollution, which comes from two main sources—cars and factories—Brenheimer says that the situation is not all that bad. "As of next August, every new car imported to Israel will have to operate on 95-octane, unleaded gas." Brenheimer adds, "In relation to the past, the industry situation is acceptable, although contaminating materials are still being emitted into the air. In the Haifa region, the situation is still not satisfactory." The main source of contamination in the Dan district is cars as well as the Redding power station with its 150-meter chimney, which is too low. The Israel Electricity Company refuses to invest money in correcting this defect because the station is planned to be shut down in 15 years.

On nuclear energy, Brenheimer writes: "The Israel Atomic Energy Commission is in charge of radioactive contamination. The Environment Ministry issues licenses and supervises the proper use of products containing radioactive materials in industry and medicine. The atomic commission is in charge of collecting waste. Information as to who collects the waste, who moves it, what standards are applied, who determines them, where is the waste stored, and so forth, is all top secret. The Environment Ministry knows nothing."

SAUDI ARABIA

Study Shows Positive Effects of Recent Environmental Measures

92WN0650A London AL-SHARQ AL-AWSAT in Arabic 10 Jul 92 p 11

[Report from Riyadh: "Saudi Study Reveals That Environmental Protection Reduces Production Costs and Enhances Industrial Productivity"]

[Text] A recent study entitled "Quantitative and Qualitative Analysis of Industrial Pollution in the Kingdom" shows that several environmental measures have been adopted by the Saudi Government.

The study, prepared by the Saudi House for Consulting Services, said that a most significant environmental measure was the decision, when planning petrochemical projects in Jubayl and Yanbu', to utilize natural gas as feedstock instead of flaring it into the atmosphere.

Another significant environmental measure was a decision, when planning the Riyadh refinery, to transform hydrogen sulfite into sulfur rather than burn it into sulfur dioxide. Another decision was to supply the facility's water needs with purified waste water.

Furthermore, cement, gypsum, and lime facilities located in residential areas have been directed to use filters to reduce dust and environmental pollutants as much as possible.

The study mentioned the introduction of biodegradable alkali-benzine-sulfonate and discussed plans by industrial cities for the treatment of associated waste water and for recycling malleable plastics by remanufacturing locally.

The study said that a positive factor of significance was the great care with which sites for industrial cities were selected wind leeward and far from populated areas. Those cities were also planned and implemented at reasonable levels and planted with trees in order to reduce industrial pollution.

Those industrial cities, supervised by the Ministry of Industry and Electricity, have no pollution at present because they house mostly light industries with no environmental impact and because other industries utilize pollution control methods and equipment. Planners also took into consideration the social impact those industrial societies could have on residential areas.

The study classifies industrial waste as gasses and vapors, liquids, and solids and discusses their environmental impact.

Solids can be in the form of particles that pollute surrounding air, or in the form of by-products that are collected and dumped in neighboring environments. Solids may also be dissolved or suspended in factory drainage water, therefore polluting it, causing harm to workers and to nearby residents. That, in consequence, would undermine production and raise health-care costs. Seepage of pollution drainage water would also cause harm to river, subterranean, and sea water, which would raise the cost of water purification for household, irrigation, and industrial purposes and do harm to fish and living beings, not to mention animal wealth, plants, and property such as buildings, installations, bridges, etc. All this would indicate that environmental protection is a major benefit and not an economic burden as some people believe. The gain is evidenced by the potential for utilizing separated materials as raw materials or finished products, which would mean higher productivity and lower raw materials costs. It would also boost the components and effectiveness of industrial security and reduce maintenance costs for industrial machinery and equipment exposed to harmful vapors and gasses.

REGIONAL AFFAIRS

Seven CIS States Sign Agreement To Form Ecological Council

LD1107082792 Moscow ITAR-TASS in English 1626 GMT 10 Jul 92

[By BELTA correspondent Valentina Menshikova for TASS]

[Text] Minsk, July 10 (TASS)—Ecology ministers of seven Commonwealth countries created an interstate Ecological Council at their meeting in the Belarusian capital which ended on Friday.

A protocol on the creation and the rights of the council was signed by Armenia, Belarus, Kazakhstan, Kyrgyzstan, Russia, Tajikistan and Uzbekistan. Ukraine attended the meeting as an observer.

The council unites ecology ministers and will meet at least twice a year, coordinator of the working group of the Council of CIS Heads of State and Government, Ivan Korotchenya told TASS.

An ecological fund with a charter capital of 60 million roubles was created, members of the council will annually earmark 0.5 percent of their gross national product to the fund which will open its central bank in Minsk.

The ministers defined as "most ecologically vulnerable zones" the Chernobyl area, the basins of the Amu Darya, the Dnepr Rivers, the Balkhash Lake, the Black, Azov, Caspian Seas and the Aral Sea zone.

RUSSIA

Need Seen for More Environmental Legislation

92WN0646A Moscow ROSSIYSKAYA GAZETA in Russian 10 Jul 92 p 2

[Article by Andrey Gusev: "Parliamentary Hearings: Laws Are in Place, but Nature Is Dying"]

[Text] A session of the Russian Supreme Soviet Committee on Ecology and Rational Use of Natural Resources was held at the White House on Krasnopresnenskaya Embankment. The subject was measures to implement the Russian Federation Law "On Environmental Protection." The law was adopted by the Russian Supreme Soviet on December 19, 1991, and took effect in March of this year.

Specialists believe that a new, modern concept in the field of ecology has now been established. Guided by the provisons of the environmental law, two nuclear reactors have been shut down in Krasnoyarsk, and a referendum is being held among the people of Cheylabinsk on the future of a nuclear power station there. But there is also unfavorable reaction to the law—for example, from the military-industrial complex, which the law has made subject to the general requirements of environmental protection.

In addition, very many others, even colleagues and partners, are sometimes taking a negative position. For some reason, environmental policy is interpreted as the departmental policy of the Ministry of Ecology and Natural Resources. But nature is the national property of the entire people!

The law "On Environmental Protection" is a law of direct action. However, in order to enhance the legal protection of the environment, it is essential to draft other normative acts as well—decrees, resolutions, statutes. It is necessary to make amendments and changes in the Criminal Code, the Code on Administrative Law Offenses, and the tax code. It is essential to gain experience in applying environmental law.

However, the ecologists also have other problems. As was pointed out at the session, environmental protection, unfortunately, has not been given an individual line item in the Russian Federation budget. And yet it is the federal budget that is to supply most of the funds for environmental protection.

It was also said at the session of the Committee on Ecology that the law "On Environmental Protection" isn't working. Yet the Ministry of Ecology is the only one of all the ministries and state committees that has its own basic law. And it holds the cards. There are also oversight agencies, the procuracy, and the arbitration court, finally. Meanwhile, the sale of brochures with the text of the environmental law hasn't even been organized properly. As one one of the Deputies who spoke commented, the law isn't working because we all aren't working.

And another thing. Medical personnel must cooperate more actively with ecologists in introducing the latest achievements of medical science in order to prevent and treat diseases caused by the currently contaminated environment—and in the final analysis, in order to stop the depopulation of Russia.

In order to reliably protect the environment, we need not just a single law, albeit a very good one. We need a whole set of legislative acts, we need law and order.

Scientists Refute Denial of Nuclear Winter Theory

PM2207140992 Moscow ROSSIYSKAYA GAZETA in Russian 18 Jul 92 First Edition p 5

[Letter from I. Safonov, consultant of Russian president's group of experts, and A. Tarko, senior scientific staffer at the Russian Academy of Sciences Computer Center: "Nuclear Winter Nonetheless Possible"]

[Text] Having familiarized ourselves with the item "No Need To Fear 'Nuclear Winter'" published in ROSSIYSKAYA GAZETA 16 May 1992, we believe it

our professional duty to express disagreement with the AP report it describes on the need to review forecasts of the climatic consequences of a large-scale nuclear war—the so-called nuclear winter.

The report says that scientists from a number of U.S. scientific centers believe that the fact of relatively slight and merely local changes in the temperature of the air near the earth as the result of the fires at the Kuwait oilfields is confirmation that the climatic consequences of a nuclear war could be small and that previous forecasts of a nuclear winter should be reviewed.

That assertion is incorrect. Analysis of the climatic consequences of the fires in Kuwait in no way refutes the correctness of nuclear winter calculations. Nuclear winter occurs as a result of nuclear bomb attacks and subsequent gigantic fires in large cities, when the products of combustion rise to the outer troposphere and stratosphere (up to 10 km) and spread there, first over the Northern hemisphere, then over the southern. A considerable drop in the temperature of the air near the earth takes place as a result of the blocking out of the sun's rays by a mass of aerosols in the air at this altitude, with the quantity, composition, and size of the aerosol particles which arise as a result of nuclear fires in large cities.

The nature of the fires in cities and at oilfields and also the composition of the relevant combustible substances differ considerably. The consequences of these fires also differ considerably. The products of combustion from fires at oilfields did not rise to a great altitude. It was this fact that determined the relatively slight change in temperature of the near-earth air.

These facts are well known to the specialists who not only studied the fires in Kuwait but also calculated their climatic consequences. Suffice it to say that these calculations were carried out by S. Bakan [name as transliterated] and others at the Max Planck Institute (Hamburg), C.A. Browning and others at the British Meteorology Service (London), and G.L. Stenchikov at the Russian Academy of Sciences Computer Center (Moscow). All the above-mentioned calculations correctly reproduced the climatic consequences of fires. It should be noted that G.L. Stenchikov has done calculations on the same model on which he had previously, in conjunction with V.V. Aleksandrov, obtained nuclear winter forecasts which have become world-famous.

There are thus no grounds for reviewing the forecasts of a nuclear winter as a result of the information about the fires in Kuwait.

[Signed] I. Safonov, consultant of the Russian president's group of experts,

A. Tarko, senior scientific staffer at the Russian Academy of Sciences Computer Center.

Nuclear Explosions Suggested To Destroy Chemical Weapons Stockpiles

LD3107113192 Moscow Radio Moscow World Service in English 0610 GMT 31 Jul 92

[Text] [Announcer] Near the port of Kambarka in the Udmurt Autonomous Republic in central Russia there are reported to be big stockpiles of the deadly chemical warfare agent lewisite. Disposing of the stockpile will be quite a problem but our science correspondent Boris Belitskiy has heard of some new ideas on the score. Boris, what did you hear?

[Belitskiy] First of all let me explain that lewisite is a vesicant. That is an agent that forms blisters on the skin, just like the notorious mustard gas of World War I fame. But unlike mustard gas, lewisite has never been used in action. As for its stockpile in the Udmurt Republic, that's doomed to stay put for at least four or five years. The reason is that there is as yet no method for destroying lewisite. It's therefore expected that a contest will be announced for the development of the safest and least expensive method of its destruction.

In the meantime, however, a group of scientists in Russia have proposed one such method which seems to be quite promising.

[Announcer] And how general is this problem Boris?

[Belitskiy] Well, in the Commonwealth of Independent States there is a total of nearly 40,000 tons of poison gases and something like 30,000 in the United States. This is a huge amount and the problem of destroying them is now quite a formidable problem. The method of destroying them that has been proposed, quite unexpectedly, originates with a group of scientists in Arzamas-16.

[Announcer] And what is that?

[Belitskiy] That's a formerly hush-hush town which is the home of Russia's Research Institute of Experimental Physics which has been concerned with developing atomic and hydrogen bombs. Its deputy scientific head, Dr. Yuriy Trubnev [as heard] has just proposed that these very bombs be used to destroy chemical warfare agents. Here he is, explaining his idea.

[Trubnev, in Russian with English translation by Belitskiy] Trubnev says they're studying the problem of destroying chemical warfare agents, highly toxic wastes of the chemical industry and even nuclear warheads by nuclear explosions. To be sure the public is today highly allergic to underground nuclear explosions but it's simply uninformed in Trubnev's view of the fact that such explosions can be conducted in an ecologically clean manner, provided appropriate geological structures are chosen and the blasts are conducted at an adequate depth.

Trubnev says that he and his colleagues could demonstrate that chemical warfare agents can be destroyed in

this way without dismantling. Other destruction technologies require that chemical weapons be dismantled and the poisonous chemicals be extracted from them. What's more the destruction of chemical weapons has to be not just 99 percent effective but 99.9999 etc. percent effective. A nuclear blast achieves just that. It turns the chemicals into plasma, after which only simple substances can be formed. Existing technologies on the other hand produce other substances and they too have to be buried.

Trubnev sees this dilemma. Either we keep storing the chemical warfare agents, running the risk of a chemical Chernobyl, or else, at a fraction of the cost, destroy them by means of an underground nuclear explosion. Back to Trubnev.

Trubnev considers the technology sufficiently developed for a demonstration under international supervision. It's important he feels to convince the world public of this. Physicists are after all part of society and they cannot live in society and feel entirely independent of it.

Chernobyl Evacuees' Plight Described

PM2007124192 Moscow ROSSIYSKAYA GAZETA in Russian 14 Jul 92 First Edition pp 1,2

[Correspondent Ivan Pyrkh report: "On Irradiated Soil. R. Khasbulatov's Visit to Bryansk Oblast Has Ended"]

[Text] You cannot convey the grief, pain, hopes, disappointment, grievances, and indignation of people who are for the seventh year running prey to the unseen oppression of the Chernobyl disaster on their native Russian soil, where their ancestors are buried and where they have built their own happiness out of fragments amid difficult conditions, brought up children, and built a future. You have to see their faces and hear their emotional voices to understand the depth of their feelings and their thoughts about authorities past and present. It is doubly hard for them compared with other Russians—along with the high cost of living they are beset day and night by radiation in the fields, truck gardens, orchards, and yards. We think that Russian Supreme Soviet Chairman Ruslan Khasbulatov sensed and recognized this fact during his visit to southwestern regions of Bryansk Oblast, areas that were most severely affected by the Chernobyl catastrophe...

Of late the Russian parliament has adopted several laws designed to protect the people living here and enable them to recover their health. The purpose of these laws is above all to provide monetary compensation, supplies of clean foodstuffs for the population, and treatment and free rehabilitation for children and adults in rest homes and sanatoriums. Last winter, when Russian President Boris Yeltsin visited Bryansk and Novozybkov, he promised to privatize enterprises in the Chernobyl area free of charge, that is transfer them to the ownership of collectives working there, and also speed up the provision of gas supply to cities and population centers. Incidentally, the provision of gas supply has been discussed for a long time now, since the accident at the Chernobyl nuclear electric power station; this is particularly essential on the territory contaminated by radionuclides, especially for private homes. The point is that the local fuel—timber and coal—is terribly contaminated with radioactive isotopes and once it is burned the stove in a home or izba becomes a kind of small atomic reactor in your own home...

It is no coincidence that talk turned straightaway to these extremely acute problems during Khasbulatov's meeting at the Novozybkov machine building plant. Bryansk Oblast Soviet Deputy Potapov, in particular, commented that enterprises are not being compensated for fixed costs [polozhennyye zatraty] and the envisaged wage supplements are being held back. What is more, the Ministry of Finance, along with other Russian departments, is promulgating delegated legislation which is deliberately cutting monetary supplements and compensation to the residents of the affected regions. One figure has been agreed by law yet officials, skirting the law, are trying to cut this state aid as much as they can. The same thing is happening to payments for food. To put it simply, they are not being issued. But residents' wages are low and the price of food is very high; just try in these conditions to have high-quality, clean food uncontaminated by radionuclides and maintain your health at all. People's material position is further aggravated by the fact that they have not received their wages and pensions for months now. Novozybkov alone is owed 200 million rubles [R] by the state. Pensioners, students, teachers, and medical personnel are the first to suffer, in other words the budget-funded personnel, the needy, and the poor.

Nothing sensible is happening as far as the provision of gas supply is concerned either. Novozybkov alone has 8,000 private homes. There are tens of thousands living in hamlets and villages and in the rayon centers of Krasnaya Gora, Gordeyevka, Klimovo, and Zlynka. What is a family to do if at least R40,000 are needed to provide their home with gas supply? Where are they to get that much money, where are they to get the pipes?

In addition, this year the state has allocated almost R2 billion at last year's prices to meet Bryansk Oblast's requirements in connection with Chernobyl. This seems a vast sum, but no "real" money is coming in for construction. Russian People's Deputy Gosporyan says that he has visited Yegor Gaydar four times trying to get capital investment. Oblast leaders and bosses have pestered the Ministry of Finance repeatedly. Kuznetsov, manager of a trust for the construction of installations at Chernobyl, has asked ROSSIYSKAYA GAZETA for help in this. You do indeed get the impression that the Russian Government has nothing to do with the victims and that the state has nothing to do with it either.

However, it is wrong to cast aspersions on the government alone. Over the last few years the situation as regards finances, construction materials, and other

resources has been fine, but what use has been made of all these things? The money has been used as the local authorities in Bryansk saw fit for other, sometimes dubious purposes. Incidentally, ROSSIYSKAYA GAZETA in its brief existence has frequently reported abuses and outrages on Chernobyl territory, abuses perpetrated in Bryansk Oblast, deliberately, for gain, or through irresponsibility on the part of local leaders at various levels. Last year alone, for instance, one in 10 construction sites in the oblast did not meet Chernobyl requirements in any parameters, the result being that R52 million of the funds destined to heal the wounds inflicted by the nuclear scourge were taken away. Last year the state allocated 250 regular apartment blocks to rehouse people from the zone affected by severe radiation. Where are they now? Who is living in them? For as yet inexplicable reasons 19 cottages have been put together in the settlement of Kokorevka and 50 in the rayon center of Kletnya, and workers from local furniture factories have been housed in them. Some 20 homes have been handed out at the Selets wood processing combine, primarily to the bosses of this enterprise, while the rest have by no means been given to settlers...

To be brutally frank, one of the most important reasons why the problems of Chernobyl are being resolved slowly at local oblast and rayon level is that the state is simply not focusing its attention on the victims.

The chairman of the Russian Supreme Soviet constantly encountered this phenomenon during his tour of the oblast. In the village of Uvelye he was literally attacked by residents on the street. Elderly peasant Vasiliy Fedorovich Shloma flew at Ruslan Imranovich, accusing the authorities of wanting to do nothing for specific individuals. He rears livestock and cannot for instance sell it either on the spot, in his own village, or in the rayon center of Krasnaya Gora, but has to take it to Byelarus, to a meat combine in a neighboring rayon. There is a host of what would be considered trivial everyday matters like that, but they are all shouldered by rural dwellers in an area very severely contaminated by radiation. As you know, that's how things turn out.

"We moved to Nikolskaya Sloboda," accountant Vera Pavlovna Shuguyeva said in the village, "we were very reluctant to leave our homes, but what could we do: Our village should have been resettled ages ago. The radiation there is terrible. I don't really like the new place at all, to be honest. Although the house doesn't seem too bad, there is virtually no garden around it—just a few lumps of earth. Houses were put up in Nikolskaya Sloboda and in the city, but production premises were not built for the livestock and not enough land was allocated, in short, there was nowhere for people to work. What can you live on if you aren't earning anything? If we had been asked what we had to do and how, the area could have been developed and life organized quite differently. But no one asked us or consulted us..."

It is all true. The departments and the authorities themselves drew up programs based not on the needs, requirements, and wishes of the people who were in trouble, but on their own ideas, which were often far-removed from the real situation. The authorities never turned to people living in the zone or consulted them as to how they wanted to live and where, where they should be resettled, what kind of homes to build, and what kind of jobs to create. There was none of that. The departments themselves dreamed up everything, including functions for themselves, and they themselves are living a carefree life on the basis of the pain of the people of Chernobyl, blasphemous though this may sound. The Russian Goskomchernobyl [expansion unknown] was set up, for instance. You would have thought that the main object and aims of this department were obvious—to protect the victims and provide them with effective aid. Nevertheless there is no sign of that today, quite the contrary. Goskomchernobyl, in conjunction with other agencies, is hurting rather than helping them...

From the very outset there was no system adopted toward resolving the colossal problems besetting hundreds of thousands of people following the Chernobyl catastrophe. Nor is there one now. Lack of departmental coordination and unscrupulous officials are preventing intelligent use of even existing potential in people's interests. To our great regret this is an ingrained phenomenon in our country, in other words, rank bureaucratism which is particularly visible taken against the backdrop of human suffering.

At the end of Saturday's tour Khasbulatov lost his patience, so to speak, in the deserted, ruined village of Bukovets. Usually a restrained, calm man, he said many harsh words about bureaucratic departments. They have borrowed from the previous communist system all the most hateful elements of its policy toward people, even people who have found themselves in most grave trouble. They are still totally unable to renounce these qualities just as the people of Zaborye cannot give up countless old slogans. This village is barely alive, yet the slogan "The Party is the Mind, Honor, and Conscience of Our Age" is painted on the facade of a deserted store.

State Program To Liquidate Chernobyl Consequences 'Insufficient'

LD1507081592 Moscow ITAR-TASS in English 1853 GMT 14 Jul 92

[By ITAR-TASS parliamentary correspondent Galina Vinitskaya]

[Text] Moscow, July 14 (TASS)—The Government of Russia and local authorities are taking insufficient measures to liquidate grave consequences of the Chernobyl nuclear disaster, head of the subcommittee on ecological problems Fyodor Gasparyan told ITAR-TASS.

Addressing the Supreme Soviet of Russia on the implementation of the parliament's "state programme for liquidation of consequences of the Chernobyl nuclear

disaster" resolution adopted on September 19, 1990, he said that in nuclear radiation polluted areas "extremely tense socio-political situation has developed due to disdainful delay in taking measures and loss of confidence of the population in local and central bodies of power."

According to him, resettlement is the most acute problem. Even half of the plans to construct houses for evacuees are not being fulfilled. The situation may only aggravate this year.

The Supreme Soviet entrusted the government to prepare a report by September, how the parliament is ensuring social security to Chernobyl disaster victims.

Chernobyl Coverup Detailed

State Committee on Hydrometeorology Report

92WN0670A Moscow ROSSIYSKIYE VESTI in Russian 18 Jul 92 p 2

[Report by the USSR State Committee for Hydrometeorology and Monitoring the Natural Environment (Goskomgidromet), dated 21 May 1986, published under the heading: "Documents Showing the True Picture of the Chernobyl Catastrophe Were Put on the Prime Minister's Desk and Filed Away: On the Evaluation of the Radiation Situation and Radioactive Contamination of the Natural Environment in the Course of an Accident at the Chernobyl Nuclear Power Station"]

[Text]

From:

USSR State Committee for Hydrometeorology and Monitoring the Natural

Environment (Goskomgidromet)

123376, Moscow, 12 Pavlik Morozov Lane, Moscow, Gosgimet

21 May 1986 No. MK 1895s

Secret. Copy No. 1

To:

Chairman of the USSR Council of Ministers

Comrade N.I. Ryzhkov

I am forwarding to you a memorandum on the evaluation of the radiation situation and radioactive contamination of the natural environment in the course of an accident at the Chernobyl AES [Nuclear Power Station] which was prepared on your instructions.

Enclosure: textual, mk 1896s, Copy No. 1, five sheets, secret

[Signed] Chairman of the State Committee Yu.A. Izrael

As a result of the accident at the Chernobyl AES about five percent of the radioactive substances which had accumulated in the reactor during the three years of its operation left the confines of the industrial site of the station.

The cloud that was formed produced a radioactive trace on terrain in the western and northern directions (in line with the meteorological situation). Subsequently, a powerful jet of gaseous and volatile substances was emitted by the reactor zone for several days. Twelve days after the accident the jet was virtually undetectable beyond the confines of the station. Its intensity declined by a factor of 100 to 1,000.

A detailed radiation contamination survey of the terrain and atmosphere was performed by airborne (five planes and three helicopters) and ground resources of the Goskomgidromet. A continuous survey of the contaminated area is in progress.

The entire ground meteorological network of the European section of our country has been tasked with radiation measurements. The zone of substantial terrain contamination (with radiation levels of more than 5 mR per hour) extends 75 kilometers to the west and 60 kilometers to the north of the station. Its area comes to about 3,000 square kilometers.

The isotope composition of atmospheric and terrain contamination has been studied. The isotopes iodine-131, tellurium-132, strontium-89, neptunium-239, ruthenium-103, and strontium-90 constitute the main components of contamination. In the initial weeks, the iodine-131 isotope (content 10 to 50 percent), which easily finds its way into the human organism through food (especially milk), poses a particular danger, and next to it, strontium-89 (with a half life of two months), strontium-90 (28 years), and cesium-137 (30 years).

A large number of highly active "hot" particles, which pose a great danger when penetrating the lungs in the process of dust formation, have been detected in the contaminated area. The plutonium-239 isotope, which was likewise detected in the contaminated terrain, poses a particular danger when penetrating the lungs.

Aerial survey and ground readings have indicated that during the initial four to five days after the accident radioactive products spread over large distances in various directions (in line with the meteorological situation). Elevated levels of contamination (exceeding background by factors of 10 to 50) were registered over virtually the entire southwestern part of the European segment of the USSR. The area with radiation levels exceeding 0.2 mR/hour exceeded 200,000 square kilometers.

Winds spread a small amount of radioactive products over the territories of Romania, Poland, Bulgaria, Yugoslavia, and the Scandinavian countries—in amounts which pose no danger to the health of the populace. The maximum levels of radiation at the borders with

Romania and the People's Republic of Poland did not exceed 0.15-0.2 mR/hour. The same levels were registered on the territories of Romania, Bulgaria, and Poland. Contamination was considerably smaller on the territories of the rest of the aforementioned countries.

In all countries the increase in the level of contamination of the natural environment was short term. It was also well below existing norms, including those recommended by the IAEA in the event of accidents at nuclear power stations.

In subsequent days the radiation situation stabilized everywhere: The outflow of gaseous and volatile products from the reactor zone subsided substantially; atmospheric contamination was dispersed. Radiation in the contaminated zone is dropping in line with decay. A substantial increase in radiation in the contaminated zones is virtually ruled out.

The overall amount of radioactivity which has been deposited on the near trace (about 100 kilometers) is estimated to be 10^7 curies, and on the far trace—1.4 x 10^7 curies (a total of about 2.4 x 10^7 curies).

Radioactive contamination of surface water and sources of water supply is becoming the most pressing issue of the radiation situation and its possible consequences in the area of the Chernobyl AES at present (mid-May) and in the immediate future.

The first peak in the increase in radioactivity of the water was associated with the direct discharge of radioactive products from the cloud and the jet to the surface of bodies of water. This radioactivity is declining; it is being diluted by new streams of pure water. On 20 May 1986 radioactivity in the Kiev reservoir did not exceed $1\text{-}2.10^{-9}$ curies/liter.

The next wave of radioactivity should be expected when precipitation from rain washes away radioactive substances. When the rains wash away radioactivity from the trace, it may be expected to appear in the river of Pripyat and other small rivers in the region of the contaminated terrain, in the Kiev Reservoir, and downstream along the Dnieper.

In the process, concentration in the Kiev Reservoir may exceed the norm by a factor of 5 or 10 (however, it will be within the norms established in the event of accidents at nuclear power stations, provided that the central source of contamination is excluded, i.e. the runoff of radioactivity from the industrial site and the adjacent zone (with an area of 20 square kilometers) with surface and subsurface waters).

For the most part this zone has been diked in order to prevent surface runoff from reaching the Pripyat river. However, this will not suffice in view of the very small distance to the old bed of the Pripyat river and the possible filtration of contamination there with subsurface waters. In view of this, it was proposed to put in a wall in the ground around the site (a special grab bucket digs a trench to the depth of 25 to 70 meters, into which clay and cement mortar is poured). Such a wall entirely eliminates the runoff and the migration of radioactivity together with subsurface water.

If the zone of the industrial site is isolated, the runoff of radiation from the entire trace in one year will not exceed the total radioactivity which ended up in the water when the cloud passed by.

The Goskomgidromet, the USSR Ministry of Health, and the USSR Ministry of Defense have developed recommendations on criteria for the possibility of residence and the need to evacuate the population from the contaminated territory, taking into account external and internal radiation, including that from dangerous isotopes, with long half-lives, which people ingest with food—strontium-90 and cesium-137.

Territories with radiation levels exceeding 5 mR/hour as of 10 May 1986 were recognized to be dangerous for residence and would necessitate temporary relocation (the area of this territory comes to 2,900 square kilometers).

It will be necessary to introduce strict monitoring of the radioactivity of foodstuffs, especially milk, on territories with radiation levels under 5 mR/hour (to approximately 0.5 mR/hour).

Therefore, additional evacuation of the populace will be necessary in certain small regions with radiation levels exceeding 5 mR/hour outside the confines of the 30-kilometer zone. Territories with radiation levels exceeding 20 mR/hour have been found unsuitable for residence and farming (even by the duty shift method). They should be expropriated for a long period of time (the area of this zone comes to about 900 square kilometers). In this zone, the occurrence of a high density of contamination with strontium-90, which has a long half-life (over 10 curies/square kilometer), is responsible for the greatest danger.

It is possible to organize a reservation in this zone. It is necessary to conduct scientific research into the transformation and migration of radioactive substances and extensive radioecological research. We should take advantage as much as possible of experience accumulated after the 1957 Urals accident in implementing an extensive set of measures to ensure the safety of the population and economic operations in the contaminated zones. It is necessary to continuously monitor the radioactivity of the natural environment in an extensive contaminated territory and in water systems associated with this territory. Such monitoring is being effected, and should be effected in the future, by the organs of the Goskomgidromet and a number of other departments.

Lev Chernenko Commentary

92WN0670B Moscow ROSSIYSKIYE VESTI in Russian 18 Jul 92 p 2

[Article by Lev Chernenko: "A Nuclear Drama: The Chronicle of Events"]

[Text] The "liquidators," who were thoughtlessly exposed to the harsh rays of lethal radiation emitted by the destroyed fourth power unit, and the residents of nearby cities and villages could not even imagine that they had become actors in a nuclear tragedy, the end of which was, alas, hopeless. These people risked their lives, with no idea of what they had encountered. A "narrow circle" of people who were privy to all the details of the unfolding drama existed only in the Kremlin and on Old Square, hundreds of kilometers away from the Chernobyl AES. The Operations Group of the CPSU Central Committee Politburo received all the information it needed.

If only this information had been available to a pregnant woman from Pripyat, to a soldier who was thoughtlessly assigned by his commander to a post next to a cesium "spot" which made radiometer hands hit the stoppers, to a fisherman sitting with a fishing rod next to a cooling pond! However, they who lived in "the free Soviet country" were not supposed to know the truth, notwithstanding the fact that, had they known it, the list of present-day and future victims of the tragedy would be considerably shorter. However, only those in the Kremlin were supposed "to know everything" in our country. What were we and the entire world not supposed to know? Here are excerpts from the minutes of the meeting of the Politburo Operations Group:

30 April 1986

"The spread of radioactive substances has been registered on the territory of Poland; in view of a change in the direction of the wind, the appearance of these substances in Czechoslovakia, Hungary, and Romania is possible."

In reference to this I recall a headline in a Polish newspaper which was characteristic of these days: "We have already become used to trouble always coming here from the east."

At a time when officials explained that there was no danger of any kind to the health of children in either Kiev or Minsk, and there was no need to send them away, G. Yagodin reported at a meeting of the Politburo Operations Group that England, France, and Italy had resolved to bring home students studying in Kiev and Minsk. At that time we journalists were instructed about the need to dispel panic rumors.

1 May 1986

The USSR Ministry of Health turned out to be unprepared to operate in the environment of a nuclear disaster. It is entered in the minutes that **"no proper registration and analysis of information received from the field has been ensured.** However, at this time mass testing of blood samples of people in the affected regions should have been carried out, not analysis of information. There were children among the hospitalized. This was concealed, too. But they did show concern for themselves. They decided to send to Chernobyl the alternate composition of the government commission in order to keep down radiation doses. Its composition later changed many times over.

However, they needed somehow to explain to the people and the entire world what had happened. Finally, at a meeting of the Operations Group several days after the accident, they decided to organize a press conference for foreign journalists. Precisely, for **foreign** journalists—this is what the minutes say. They did not think about our journalists: As far as they, "apprentices," were concerned, it was easier to issue instructions and they would write what was needed.

At the same meeting they resolved "to dispatch a team of Soviet correspondents to regions adjacent to the zone of the Chernobyl AES site with a view to preparing materials for the press and television..." What kind of materials do you think—truthful, objective materials?! Not at all: "materials... testifying to the normal course of life in these regions." Such were the instructions given!

I was one of this group of journalists. Having learned about the accident, naturally, from foreign sources (I worked for TASS at the time), my colleague Vladimir Itkin and I, together with photographer Valeriy Zufarov, tried to break through to the Chernobyl AES. We approached the Department of Propaganda of the Central Committee, to no avail. It was precisely on 1 May (it is now clear that a decision was made on that day) that we were ordered to prepare for an assignment. On 2 May we were summoned to the Central Committee. We were received by Aleksandr Nikolayevich Yakovlev. He said: "You must go to Chernobyl." We asked: "What are we to write?" Yakovlev responded: "Write the truth. We still cannot figure out what is happening ourselves." However, how were we to write the truth if, say, Goskomgidromet Chairman Yu. Izrael, who forwarded to N. Ryzhkov comprehensive and, we must say, terrifying information about the catastrophic consequences of Chernobyl, gave absolutely different, reassuring numbers to journalists during an interview.

The military men were silent. Nuclear physicists evaded answers. Medical specialists, from whom we tried to receive data on the number of victims, lied. Gorbachevian glasnost failed to pass the test of Chernobyl. Never mind glasnost: The regular text of yet another government report on the situation at the Chernobyl AES was published in the press only after its approval by the Politburo. There is an appropriate notation in the minutes: **"To approve the text of the regular government report on the situation at the Chernobyl AES."**

7 May 1986

"The radiation level in Kiev has increased to 0.7 milliroentgen per hour."

Naturally, this was not reported in Kiev. It was hot, chestnut trees were in bloom, they sold ice cream in the streets, and large strawberries appeared at the markets. Meanwhile, radioactive dust hung in the air, and invisible harmful radiation permeated the city.

Instead of warning the people about the danger, they resolved at the meeting: **"To instruct Comrades Sedunov and Shchepin to calculate the doses of radioactive rays to which the population of Kiev was exposed, to evaluate the degree of their biological impact, and to project the time frame within which special prevention measures do not have to be used in Kiev."**

The people took "preventive measures" themselves. Despite this being the height of a struggle against alcoholism, Ukrainian vodka, "Cabernet," and "Ukrainian Oksamit" were in great demand.

The people also gathered that an iodine preparation should be taken for prevention. Potassium iodide was meant. However, there naturally were no special pills. Many people simply drank iodine, burning their insides and poisoning themselves. Statistics concerning such poisonings were eagerly given to us by medical specialists: Supposedly, this was what they were suffering from rather than radiation.

Meanwhile, the statistics concerning those afflicted were kept secret. Only now, as we read the secret minutes, do we find out that, as it turns out, 1,821 people were first admitted to hospitals in one day, 7 May, alone. **"The number of individuals being treated on an in-patient basis comes to 4,301 people, including 1,351 children. Of them, 520 people are diagnosed as having radiation sickness, including functionaries of the USSR Ministry of Internal Affairs. The condition of 34 people is serious."**

At this meeting the resolution "On the Urgent Draft of Construction Personnel into the Ranks of the Armed Forces" was adopted. In the middle of the night people got summonses from military commissariats, and could not even catch their breath before they ended up in the Chernobyl zone. Hundreds of thousands of people, so-called liquidators, volunteers, and those drafted into "the ranks of the Armed Forces" were driven through radiation and radioactive dust. The echoes of Chernobyl have already affected the health of many of them. Now specialists are saying that there was no need whatsoever to send such tremendous masses of people to Chernobyl. With clear-cut and rational organization they could have gotten by with a far smaller number of specialists. However, as always, the system thoughtlessly used numbers rather than skill.

8 May 1986

"As a result of the discharge of radioactive substances, the contaminated zone (from 0.2 to 7.0 milliroentgen per hour) has embraced territory with an area of farmland of 10.9 million hectares, of which 7.5 million hectares is arable land. It includes Kiev, Gomel, Mogilev, Chernigov, Vinnitsa, and Zhitomir Oblasts, and parts of Bryansk and Orel Oblasts.

The main danger is posed by the radioactive contamination of agricultural products for immediate table use. For example, consumption of milk, especially by children, may bring about the accumulation of radioactive iodine in the thyroid gland, and may cause grave consequences.

As far as crops are concerned, the consumption of inadequately washed fresh green vegetables poses the greatest danger. In the future, an additional evaluation of the radioactive contamination of the grain crop will be needed, with a view to specifying its economic use.

The experience of the elimination of the consequences of radioactive contamination and organization of agricultural production on the East Urals radioactive trace, experimental data from scientific research establishments, and measures currently being taken in the discharge zone of the Chernobyl AES indicate that the loss of agricultural output may be reduced to a minimum. Given appropriate processing, all output may be used as food or animal fodder.

At present, virtually all milk in Gomel Oblast, as well as in five rayons of Kiev Oblast, three rayons of Chernigov Oblast, and two rayons of Zhitomir Oblast, cannot be used in fresh form due to the high content of radioactive iodine. For this reason, milk is being processed into butter or cheese. Radioactive substances are not detected in butter. The skim milk generated in the process is used for drying. It will be fit for consumption in approximately one month.

It was established that the washing of animals with water, as well as the removal of lymph glands, brings about the production of meat suitable for consumption in the process of slaughtering cattle and hogs.

Planned agricultural work, which is a means to reduce the intake of radioactive substances by plants and the organisms of animals, is being carried out in an organized fashion in regions which have been contaminated with radiation (with the exception of the evacuation zone). As of 5 May a total of 83 percent of spring crops were planted, including 84 percent in Kiev Oblast, and 88 percent in Gomel Oblast.

Now we understand: They washed it with water, removed lymph glands (even then, perhaps, not always), and shipped the meat spiced with radionuclides to, for example, Siberia. Hungry, they would wolf it down anyway! What if the director of a meat-packing combine refused to accept contaminated meat? To this end the party had a proven method: He would have had to turn in his party membership card! "The mind, honor, and conscience" could not care less about how many people would be done for, having been poisoned by radioactive meat. So, the party was not concerned about the people.

What about the Ministry of Health, which safeguards the health of the people? What was it doing? For its part, the Ministry of Health did show concern. The minutes suggest that on 8 May "the USSR Ministry of Health adopted new norms for permissible levels of exposure of the population to radioactive rays, which exceed the old ones by a factor of 10. In special cases, it is possible to increase these norms to levels exceeding old ones by a factor of [20?—original illegible]." After all, this is how easy it is to combat radiation: You increase norms by dozens of times, and everything is normal! At present, they only increase prices like this. However, thank God, this is no lethal threat to our health.

They did not see fit to warn the people about the looming threat of radiation. After all, there are elementary measures which one needs to know about—close windows, do the dusting, spend less time outdoors. Nothing of the kind. There is this provision in the minutes: **Concerning a TV presentation by Comrades A.I. Vorobyev and Ye.Ye. Gogin. Taking into account an improvement in the situation at the Chernobyl AES, it is considered feasible for them to refrain from the above presentation."**

The situation "improved" to such a degree that at the same meeting the military was charged with **"conducting a dosimetric survey of the levels of radioactive substance contamination in the area of Tula. If necessary, measures should be taken to decontaminate the contaminated areas."**

Here it is: Radiation had almost reached Moscow, but the Politburo believed that the situation had improved.

On the same day yet another resolution was adopted at the meeting of the Politburo Operations Group. We quote the minutes: **To instruct the State Committee for Science and Technology (Comrade Sidorenko) to prepare findings on the causes of the accident at the Chernobyl AES and compliance by power units with RBMK-type reactors with modern requirements for the safety of nuclear power installations."** That is to say, instructions were given to scientists, just as they were to journalists. We do not need you to sort things out, they said, but rather to prepare findings that the RBMK reactor meets all safety requirements despite the fact that, as it turned out, many defects in its design were found which largely facilitated the development of an emergency situation.

However, as we know, the accident was painted as a consequence of a human error, incorrect actions by the personnel. "Chernobyl scapegoats" were found—the former director of the Chernobyl AES, Bryukhanov, and other specialists of the station. The issue of the guilt of the designers of the reactor was not on the agenda, despite the fact that Academicians Dollezhal and Aleksandrov, who "pushed through" the mass construction of RBMK-type reactors on the strength of their authority, are also partially responsible for Chernobyl.

10 May 1986

"Radioactive contamination levels have increased in a number of rayons in Tula, Orel, Bryansk, and Kaluga Oblasts. In two days, 4,019 people have been admitted to hospitals, of whom 2,630 are children. A total of 8,695 people are being treated as in-patients, of whom 238 have been diagnosed as having radiation sickness, including 26 children. During the day, two people died; the condition of 33 people is grave. The number of fatalities as a result of the accident came to five."

These were the first victims of the tragedy. As specialists estimate, by now their number comes to as many as 8,000 people...

This tragic count keeps growing...

They are the victims of Chernobyl, the victims of a system for which the people have always been mere cogs and cannon fodder. Chernobyl was the first, harsh symptom of the beginning of a crisis of this system. The process got underway. From this standpoint, April 1986 and August 1991 are stages in the same chain reaction, which brought about the explosion of the totalitarian system. However, its half-life is still running, and radiation is still being emitted, afflicting people. There is only one reliable defense against it. It is democracy.

Secret Minutes of Politburo Operations Group

92WN0670C Moscow ROSSIYSKIYE VESTI in Russian 18 Jul 92 p 2

[Minutes of meeting of CPSU Central Committee Politburo Operations Group: "For the Populace—Half-Truths and Lies in Order To Conceal From the People and the Entire World the True Scale and Consequences of the Tragedy"]

[Text]

Secret

Minutes No. 21

of a meeting of the CPSU Central Committee Politburo Operations Group for issues associated with elimination of the consequences of the accident at the Chernobyl AES

4 June 1986

In attendance:

members of the CPSU Central Committee Politburo—Comrades N.I. Ryzhkov, Ye.K. Ligachev, V.I. Vorotnikov, V.M. Chebrikov

candidate members of the CPSU Central Committee Politburo—Comrades V.I. Dolgikh, S.L. Sokolov

Minister of Internal Affairs of the USSR Comrade A.V. Vlasov

Invited to the meeting:

Deputy Chairmen of the USSR Council of Ministers—Comrades Yu.P. Batalin, B.Ye. Shcherbina

President of the USSR Academy of Sciences—Comrade A.P. Aleksandrov

USSR Minister of Power and Electrification—Comrade A.I. Mayorets

First Deputy Minister of Defense—Comrade S.F. Akhromeyev

Goskomgidromet Chairman—Comrade Yu.A. Izrael

First Deputy Minister of Medium Machine Building—Comrade A.G. Meshkov

First Deputy Chairman of the Gosatomenergonadzor [State Committee for Safety in the Atomic Power Industry]—Comrade V.A. Sidorenko

First Deputy USSR Minister of Foreign Affairs—Comrade A.G. Kovalev

First Deputy USSR Minister of Health—Comrade O.P. Shchepin

Deputy USSR Minister of Power and Electrification—Comrade G.A. Shasharin

Director of the Biophysics Institute of the USSR Ministry of Health—Comrade L.A. Ilin

Deputy Director of the Institute of Nuclear Power imeni I.V. Kurchatov—Comrade V.A. Legasov

First Deputy Chief of the CPSU Central Committee Department of Heavy Industry and Power Engineering—Comrade V.M. Frolyshev

1. On measures taken by the USSR Ministry of Power and Electrification and the Ministry of Medium Machine Building to ensure the safety of operating nuclear power stations and to eliminate shortcomings in this sphere.

To acknowledge reports by Comrades Mayorets, Meshkov, and Sidorenko on this issue.

2. On the draft resolution of the CPSU Central Committee and the USSR Council of Ministers on measures to preserve installations of the Chernobyl AES associated with the accident at the fourth power unit, and to prevent water runoff from the compound of the power station.

To approve the draft of the aforementioned resolution, to refine it editorially, and to submit it for confirmation to the CPSU Central Committee Politburo.

3. On the draft resolution of the USSR Council of Ministers and the AUCCTU [All-Union Central Council of Trade Unions] on terms for remunerations for labor and material supply for employees of enterprises, organizations, and establishments engaged in work to eliminate the consequences of the accident at the Chernobyl AES and to prevent the contamination of the natural environment.

To approve the draft of the above resolution and submit it to the CPSU Central Committee Politburo.

4. On the draft instruction of the USSR Council of Ministers to create a Construction Administration of the Ministry of Medium Machine Building at the compound of the Chernobyl AES.

To approve the draft of the above instruction and to submit it to the CPSU Central Committee Politburo.

5. On directives for participants in a regular press conference for Soviet and foreign journalists.

To approve, in the main, directives for participants in the regular press conference for Soviet and foreign journalists. To instruct Comrade Batalin to refine them, taking into account remarks and proposals stated at the meeting (the text of the directives is enclosed).

Annex to Minutes No. 21.

Directives for the coverage, at the press conference, of the main issues associated with the causes and progress of the elimination of the consequences of the accident at the fourth unit of the Chernobyl AES

1. Proceed, in the main remarks and answers to questions, from the theses and conclusions outlined in the presentation of Comrade M.S. Gorbachev, CPSU Central Committee general secretary, on Soviet TV on 14 May of this year.

2. In the course of covering the progress of eliminating the consequences of the accident at the Chernobyl AES:

—provide extensive information on the progress of the elimination of the consequences of the accident at the station and a description of the radiation situation in the area;

—show the successful fulfillment of broad-scale technical and organizational measures aimed at eliminating the consequences of the accident and the prevention of possible radiation damage, which are without precedent in the practice of the world;

—note the high degree of mass labor heroism in the course of the aforementioned work.

3. Cover broad-scale measures taken to ensure the safety of the population; note, in particular, care taken of the people in the contaminated area (medical services, job placement, housing construction, and so on).

4. Point out the unsoundness of claims and evaluations, by both individual officials and the press, in a number of Western countries which have made statements on the allegedly great ecological and financial damage they have

suffered because of the spread of small amounts of radioactive substances with air masses from the zone of the Chernobyl AES.

5. Draw the attention of participants in the press conference to the close linkage between the issues of peaceful and military uses of the atom in the modern world. Use, as much as possible, the most significant thesis from the presentation of Comrade M.S. Gorbachev:

"The accident in Chernobyl has once again shed light on the abyss that will open if humanity is afflicted with a nuclear war. After all, the accumulated nuclear arsenals are fraught with thousands upon thousands of catastrophes much more terrifying than that at Chernobyl."

6. In responses to questions, proceed from information found in the enclosed memorandum "On the Radiation Situation and the Progress of Eliminating the Consequences of the Accident at the Chernobyl AES."

[Enclosure] to Minutes No. 21

On the Radiation Situation and the Progress of Eliminating the Consequences of the Accident at the Chernobyl AES

(Materials for a press conference)

The Chernobyl Nuclear Power Station, consisting of four units with the RBMK-1000 reactor systems, with a power capacity of 1,000 MWt each, was built and commissioned between 1978 and 1984 (one unit at a time). The fourth unit was commissioned in 1984.

On 26 April 1986, at 01:23:50 hours, an accident occurred, in which the active zone of the reactor installation and the building which housed it were quite heavily damaged.

The accident occurred at a time when the fourth unit of the AES was being smoothly taken off line. The causes of the accident are being studied. On a preliminary basis, we may say that substantial and rapid generation of steam brought about an explosion, the destruction of the reactor installations, and the ejection to the atmosphere of some radioactive products accumulated in the active zone. The already established circumstances made it possible to continue the operation of a station of this type in the rated mode.

At the time of the accident at the fourth unit, all other units of the station operated under load. The first, second, and third units were taken off line in a planned manner and cooled down after the accident, for the duration of the elimination of its consequences. Their reactor installations are being safely maintained in a sub-critical condition.

The status of the first stage of the Chernobyl AES (consisting of the first and second units) is normal, and it may actually prepare for operation under load. Likewise, the third unit of the station (coupled with the fourth unit where the accident occurred) virtually was not damaged during the accident. However, after the consequences of the accident are eliminated, it will require a thorough visual inspection, review, and control of the main reactor equipment and systems.

As specialists estimate, between one and three percent of radioactivity accumulated in the fuel elements of the reactor were ejected from the reactor installation beyond the confines of the fourth unit of the Chernobyl AES during the accident. A substantial amount of radioactivity was carried by the steam explosion to premises adjacent to the reactor.

Following the accident, the nuclear reaction in the reactor of the fourth unit was stopped. The fire which broke out on the premises was put out. All work on elimination of the consequences of the accident was focused on containing the spread of escaped radiation, decontaminating the compound of the station and equipment, and preventing the spread of radioactive products to bodies of water.

Immediately after the accident, measures were developed and urgent work began to contain the active zone on the lower protective slab of the reactor, as well as to extend an additional cooled level under the bedplate of the fourth reactor unit with a view to ruling out, with guarantees, the penetration of radioactive products and heated fuel into the ground and subsurface water, in the event of the unlikely but nonetheless possible situation associated with the heating and melting of the fuel remaining in the active zone of the reactor.

Terrain in areas adjacent to the station was contaminated as a result of the ejection of radioactive products during the accident at the Chernobyl AES. Priority measures were taken to evacuate the population from areas directly adjacent to the compound of the nuclear power stations and within a 30-kilometer zone. Radiation levels close to the AES reached dozens of milliroentgens per hour. The flow of gaseous and volatile products from the area of the accident virtually stopped several days later.

The radiation situation in the area of the AES has fully stabilized by now. Radioactivity is dropping in line with decay (by a factor of 5 or 6 per month).

The drop is occurring at a faster rate in the localities as a result of decontamination efforts.

Airborne and ground assets of the Goskomgidromet took (and continue to take) detailed radiation surveys of the atmosphere and terrain. Data are being continuously transferred to the government commission and local authorities.

Aerial surveys and data from the ground network indicated that contamination was spread by winds in the northwestern, western, and southern directions. In Kiev, radiation levels reached 0.5 mR/hour for a short period

of time, in Zhlobin—0.5 mR/hour, and in Gomel—0.3 mR/hour, which does not endanger the health of the populace.

By now, the isotope composition of the contamination of the atmosphere and terrain has been studied. Fragment [oskolochnye] elements are its main components. Plutonium isotopes were found in the vicinity of the station. In the initial weeks, the iodine-131 isotope commanded special attention.

Premises, and in certain cases terrain, are being decontaminated in villages from which the population was evacuated.

The Pripyat river was diked in the vicinity of the AES in order to prevent the contamination from being washed into the water.

Both previously and at present, the concentration of radioactivity in the water of the Kiev reservoir has come to 1-3 x 10^{-9} curies/liter, which is below existing norms.

Foodstuffs, primarily milk and water, are being continuously monitored on a large territory adjacent to the AES zone.

Measurement of the radioactivity of all natural environments has been organized everywhere and is being carried out continuously (within the Goskomgidromet organization).

Information about radioactive contamination of the atmosphere and terrain from six meteorological stations is being provided to the IAEA on a regular basis.

Criteria of exposure for evacuation (and re-evacuation) were confirmed and brought to the attention of the Ukrainian SSR and Belorussian SSR Councils of Ministers, with a view to revising the resolution of the issue of evacuating the population from zones with high contamination levels. The maximum dose of total radiation equal to 10 rem in the first year was accepted for the population. Vigorous medical observation and examination of the populace was instituted in these zones. In keeping with these criteria, several localities were evacuated in addition and, vice versa, a certain part of the population has already returned to its villages.

Organs of the USSR Ministry of Health and the republics embarked on a joint effort to detect the sick and examine the population in areas adjacent to the Chernobyl AES. Radiometric and medical examinations were administered to an extensive contingent of the population in all areas where an increase in radiation levels was registered (on the territories of the Ukrainian SSR and the Belorussian SSR, and to a very insignificant degree on the territory of the RSFSR).

If contamination in excess of that permissible is found in the course of radiometric examination, blood samples were and are taken, radiation levels above the thyroid gland were and are measured, and sanitary processing was and is administered.

Appropriate indicators were also confirmed in order to resolve the issue of hospitalization.

More than 600 medical teams have been drafted to provide medical assistance and take preventive measures.

In the past period, all individuals approaching medical facilities have been examined.

Acute radiation sickness was diagnosed in 187 victims (all of them from among AES personnel), of whom 24 have died (two people perished at the time of the accident). The diagnosis of radiation sickness for the hospitalized segment of the population, including children, has not been confirmed.

Extensive prevention measures have also been taken in the past period.

Stocks of potassium iodide have been accumulated, and necessary amounts of it have been sent to the republics with a view to preparing and implementing measures to prevent contamination with radioactive iodine, especially in children, in certain territories of the Ukrainian SSR, Belorussian SSR, and the RSFSR. This made it possible to fully meet the needs of the population, primarily children, in territories contaminated in excess of permissible levels, and to rule out the intake of radioactive iodine with milk and dairy products.

Some 7,903 units of the observation and laboratory control network were activated in order to organize medical and hygienic monitoring of the contamination of the air, water, milk, and other foodstuffs.

Coordination with all interested Councils of Ministers of Union republics, ministries, and departments has been ensured with regard to the issues of holding a summer health maintenance campaign for children, as well as recreation for the working people. It has been explained that there are no restrictions on recreation and other events, with the exception of the evacuation zones.

Organs of state sanitary supervision are providing the necessary practical assistance to the enterprises of the Agroindustrial Committee with regard to the sale of products to the populace. Water, including drinking water, milk, vegetables, and greens, as well as meat and other foodstuffs, continue to be systematically monitored.

Measures are being developed and implemented which are aimed at reliably isolating the reactor installation of the fourth unit of the Chernobyl AES from the atmosphere, and burying it together with the destroyed structures of the building and contaminated equipment.

At present, more than 370 nuclear reactors operate in various countries of the world. In our country, about 10 percent of electricity is generated by nuclear power stations whose installed capacity comes to 28 million kilowatts.

It is impossible to imagine the future of world power generation without the development of nuclear power generation.

The further development of nuclear power generation should be accompanied by greater concentration of the efforts of science and technology on ensuring its safety and on preventing even insignificant deviations from established technological procedures.

Moscow Drought Empties One-Third of Reservoir Capacity

MK1007141792 Moscow MOSKOVSKIY KOMSOMOLETS in Russian 8 Jul 92 p 1

[Unattributed report: "Moscow Has Already Sucked Up an Entire Reservoir"]

[Text] As MOSKOVSKIY KOMSOMOLETS reported yesterday, the scale of the pumping of water for the capital's drinking needs from the Istrinskoye Reservoir has assumed catastrophic proportions. In some places the shoreline at Istra has already retreated 100 meters, and it now resembles the sad landscape of the Aral Sea.

But a similar fate has also befallen other reservoirs in the Moscow water basin—Mozhayskoye, Ruzskoye, Ozerninskoye. Since the beginning of the year more than one-third of the total volume of the four main reservoirs' 780 million cubic meters of water has been taken—270 million cubic meters. It is possible to believe without exaggeration that there is now one less reservoir (according just to modest yardsticks!) in Moscow Oblast.

But extreme need makes it necessary to take water in such barbarous quantities, we were assured in Mosvodokanal's administration. There has not been a drought like the present one since 1972. Not only did Moscow not see the normal quantity of snow, but it has not even seen an amount of rain that can be called at all decent. If it were not for the pumping of clean water from the reservoirs, we would already be getting from the faucets in our apartments half water and half silt from the lower stratum of the Moskva River.

Fortunately, so the leaders of Mosvodokanal assure us, it will be possible to avoid a further discharge of water from Moscow Oblast's reservoirs. A reserve system for pumping water from the Vazuzskoye Reservoir has been brought into action. We have now been drinking water from Tver and Smolensk Oblasts for at least a couple of days.

Moscow Oblast Allocates 19 Million Rubles for Environment

LD1607011292 Moscow Radio Rossii Network in Russian 2000 GMT 15 Jul 92

[Text] At a session of the lesser soviet of the Moscow Oblast soviet, the decision was made to allocate nearly 19 million rubles for financing works on the environment protection. The necessity of this has been called forth by the fact that the ecological situation in the oblast is close to catastrophy. Southeastern areas and the circle around the capital are most unfavorable.

Negligent Handling of Radioactive Materials in Moscow

PM2307150692 Moscow IZVESTIYA in Russian 16 Jul 92 Morning Edition p 6

[Viktor Belikov report: "Radiation Rash on the Map of Moscow"—report is accompanied by two rough diagrams each showing a number of dots on a sketch map of Moscow's main roads and rivers]

[Text] Every year between 50 and over 80 areas of dangerous radioactive emission are discovered on the territory of Moscow by the specially trained "Geoekotsentr" patrols.

In the last 10 years they have identified more than 600 such sources, which were subsequently deactivated (see map on the left). The second map which we reproduce reflects the situation regarding identified sources of radiation today; work to eliminate them is being carried out. The marks of different pattern and color denote the various degrees of radioactivity, and therefore of danger.

Until very recently material about these "finds" was considered top secret and was hidden from the general public, although each one was immediately reported to the local authorities, civil defense, and other departments who were supposed to know and to take the appropriate measures. Leonid Ivanovich Dmitrakov, general director of "Geoekotsentr," and his specialists believe that the total secrecy which for many years covered up any incidents of loss of control over sources of radioactive isotopes inflicted great damage. To this day a large section of the population has not been inculcated with the necessary caution or developed the necessary heightened caution in dealing with the true monster of our technological age—radiation.

It is like AIDS. Not manifesting itself initially, it penetrates unopposed deep within, spreads far and wide, and inflicts irreparable damage to all living things.

"Unfortunately, this is no exaggeration," in the assertion of my companions V. Yegoshin, an operator, and V. Seleznev, driver of the patrol jeep, whom I was able to accompany on a special assignment through the streets of Moscow. "A large proportion of the radioactive objects uncovered bear obvious traces of misuse: scratches, signs of wear, dents. These objects look harmless, but radiate so much that the dosimeters go off the scale! And what can you say about the war museums or the amateur science laboratories in schools or vocational and technical colleges to which they indiscriminately consign old indicators with luminous dials, faces, or pointers, which also give out a hefty dose of microroentgens?"

Thanks to the motorized patrols, which are then supplemented by foot patrols, virtually all so-called localized and small-scale [ploshchadnyye] radioactive sites are detected.

Those responsible for their emergence are usually among the 1,500 enterprises, institutes, and laboratories of industrial Moscow which use radioactive substances. A negligent laboratory technician who dumps an ampule containing an isotope into the street trash can. A driver who is too lazy to drive a dangerous load destined for burial to the remote site and dumps it on a chance vacant plot in the city. Or simply a pilfering employee who takes a fancy to the massive lead shield covering a source of ionizing radiation. These examples, like dozens of similar ones, are unfortunately taken from the daily chronicle of the "Geoekotsentr" patrol service.

My interlocutors believe that control over the movement and use of radioactive isotopes has weakened recently and must be tightened up. The Moscow City Public Health and Epidemiological Station and its subdepartments in the okrugs must be given the right of unrestricted access to all facilities which give rise to doubts as to their radiation cleanliness. At the present time higher education establishments and institutes have been removed from such extradepartmental control, which, incidentally, was the cause of the months of contamination recently detected in laboratories and other premises of the Moscow State Technical University (the former Bauman University).

The numerous MP's [not further identified] and cooperatives which are springing up like mushrooms are trying to work with fissionable materials in an amateurish fashion, without properly training their personnel, who lack the basic knowledge in the specific sphere of safety practices. One such "expert" in pursuit of profit contrived to contaminate the waste disposal unit in his house with radionuclides to such an extent that the standpipe had to be completely replaced. He irradiated himself with a dose five times in excess of the permissible norm! The criminal sentence delivered to him by the court hardly affected this doomed man's fate.

In parting I inquired how deactivation—the destruction of a radiation source—is carried out. If it is a point source and of a small size it is carefully picked up with pincers and placed in special packaging or a special container. If the dimensions or the area of contamination is large then the job cannot be done without bulldozers, excavators, and other heavy equipment. Then the specialized "Radion" science and production association is brought in, which knows how to act in any situation.

Krasnoyarsk Nuclear Combine Director Fears Possible New Chernobyl

LD1307053292 Moscow Mayak Radio Network in Russian 0330 GMT 13 Jul 92

[Report by ITAR-TASS correspondent Yuriy Khost for Mayak Radio from Krasnoyarsk Kray]

[Text] Good morning. I would like to tell you what I reported to ITAR-TASS a few minutes ago. The atmosphere in the Krasnoyarsk mining and chemical combine, where plutonium for nuclear weapons is produced, has heated up again. A pre-strike state has been declared here, provoked by the absence of ready cash in the town.

This situation is typical in many ways of the country's economy in general. At the combine, it is aggravated by the fact that according to a resolution of the Russian Supreme Soviet Presidium on providing priority bank services to enterprises of the nuclear power engineering sector under the Russian Federation Ministry for Atomic Energy, Krasnayarsk No. 7 combine has been included in a special list of enterprises which must be granted priority bank services.

I have been at this underground atomic site quite a few times, and I know what a thorough medical check-up the workers and specialists have to undergo before starting their shift. Now imagine what psychological state the people are in, having been paid 3,000 rubles each in April wages, and only 2,000 rubles in May—and then only half the staff.

I understand the agitation of Valeriy Lebedev, director of the combine. He told me we may well get ourselves into a second Chernobyl. The shift serving the nuclear reactor, fed up with the vicissitudes of life, may become unpredictable in its actions. By the way, Valeriy Aleksandrovich himself brought this document [as heard] to the kray's organizations, including the Krasnoyarsk branch of Russia's Central Bank. He was told, however, that local bodies are unable to carry out this resolution of the supreme authority in the state.

Options for Construction of Atomgrad-26 Reprocessing Plant Considered

PM2307090192 Moscow ROSSIYSKAYA GAZETA in Russian 18 Jul 92 First Edition p 3

[Report by Yuriy Vakhrin: "Atomgrad-26: Between the Past and the Future"]

[Text] Krasnoyarsk—Krasnoyarsk-26 stands alongside the "number-only" Sverdlovsks, Arzamases, Chelyabinsks, Tomsks, and other familiar or as yet unfamiliar cities of our nuclear empire. And like its twin brothers it has left plenty of "traces" during the years of its existence. The level of pollution in some rayons of Krasnoyarsk down the Yenisey is up to 160 curies per square kilometers. That is even higher than in individual places of the 30-kilometer Chernobyl zone.

"The main sources of danger are the two "single flow" nuclear reactors installed in the fifties to produce weapons-grade plutonium. For 35 years in succession the reactors' fuel core was been cooled by the same method: Water is pumped from the Yenisey into the "jacket" and then flows out again without any decontamination. It is simple and, most importantly, cheap. The price of this terrifying cynicism is still not fully known. A radiometric

survey from aircraft shows that the Yenisey is "radiating" all the way to the ocean. So far no one has conducted a serious ground survey. At least, I know of only one expedition of ours organized on the instructions of the Federation of Trade Unions of Krasnoyarsk Kray by geological specialists. Traveling 768 km from Krasnoyarsk-26 to Lesosibirsk, they discovered about 150 centers of radioactive contamination on the banks, spits, and islands. Anomalies are noted in the soil near the banks, sediment, grass, and algae.

There is no doubt that this is the result of regular discharge of manufacturing effluent by the Krasnoyarsk mining and chemical combine directly into the river—I am sure of it, says V. Burmistrov, technical inspector of the kray's federation of trade unions for monitoring the state of the environment. He believes that the studies must be continued. Comprehensive expeditions and authoritative commissions must not only reveal sectors of radioactive contamination dangerous to everything that lives but also determine measures to protect the territory and recultivate the land.

This summer the first reactor was halted in Atomgrad (as the no longer secret Krasnoyarsk-26 is being called increasingly frequently). Next year the second will be sealed. But none of the Krasnoyarsk "greens" is displaying joy at this victory.

First, it has emerged that the installations for the production of "stuffing" for atom bombs should be closed down in any case—their operating life has been exhausted. Second, even a reactor which has been stopped will "glow" for several decades. And be cooled by the same simple "single flow" method. In addition alongside the two military reactors a third is operating, providing heat and electricity for the combine and the city with a population of 100,000. Its safety is also in serious doubt.

And all this serves as the background for another dramatic story connected with the construction of the nuclear fuel reprocessing plant—RT-2.

According to V. Lebedev, the combine's general director, the production premises and equipment where they work with "fissionable" materials are also contaminated by radiation. They cannot be used for any purposes other than those for which they were intended.

The new plant will make it possible to use the areas released and the people employed at them. Restoring and "reinriching" fuel to use it again at a nuclear electric power station is more advantageous than mining uranium from scratch. Specialists assert that the reprocessing of accumulated waste from nuclear power stations will make it possible to supply all nuclear electric power stations of the former Union with fuel for 12-13 years.

The first section of the RT-2 plant has already been constructed. But the installation of the second is under doubt. The construction has been frozen. Both by public demand and for more prosaic reasons: There is no money. Although representatives of the mining and chemical combine do not tire of arguing that the new production facility will not cause any harm. The technology is geared to a closed cycle and not a drop of "dirt" will enter the Yenisey.

What should be done here? I think that since we have already gotten mixed up in nuclear power all its problems must be resolved to the end. Including the problems of the waste from nuclear electric power stations and its use and decontamination. As a rule no one disputes that. But there are always two dubious questions: Why in our country? And—how perfected is the technology, how safe is it? In response at best there is rudimentary reasoning...

But sooner or later we shall have to investigate it in earnest.

Last winter a "nuclear-gastronomical conflict" arose between Krasnoyarsk and Ukraine. The promised food had failed to reach Siberia. In response the Krasnoyarsk people sent back freight cars containing waste from Ukrainian nuclear electric power stations. Here is how this quarrel ended: As before the waste is continuing to come in to be stored at Atomgrad although there are none of the promised shipments of grain, sugar, or butter from Ukraine. Here Russia receives virtually nothing from the neighboring republic for storing the waste, although throughout the world such "services" are priced very highly. And in this situation the nuclear scientists will simply not succeed in persuading their fellow countrymen that the siting of a fuel reprocessing facility is advantageous.

Unfortunately, for a long time there was a cunning attempt to persuade us that the country was becoming a dumping ground for radioactive waste only because it was unconditionally observing the rules laid down by the world community: The seller of nuclear fuel must take it after it has been used. It has emerged that this is by no means the case. It is known that, for instance, France and Britain reprocess fuel from nuclear electric power stations but neither country has become a storehouse for foreign radioactive waste. Under the terms of the contract, reprocessed fissionable materials and radioactive waste encased in glass are returned to the countries from which they were taken for reprocessing. Here it is not without interest to know that the states involved have assigned funds free of charge for the construction of these enterprises. That is Britain and France received their reprocessing plants free of charge. And that fact is in no way reflected on the level of cost of the enterprise's services to the clients and investors.

In the opinion of Yu. Revenko, deputy chief engineer of the mining and chemical combine, there are several options for emerging from the present situation. The first is to do nothing now. To wait and argue. But later, having written off all expenses incurred and lost a vast amount of time, nonetheless to resume the construction

of the RT-2 plant. The second way is to begin to construct it ourselves right now. With a consideration for the increase in prices that will require tens of billions of rubles. Russia will hardly find them today. And finally there is a third option. Attracting foreign capital, that is following in the footsteps of the French and the British. That is entirely feasibly if we gear ourselves to the Asian countries.

Nonetheless it should be admitted that the halting of construction has been useful. The former scheme for reprocessing presupposes obtaining waste in liquid form: It was simply pumped into artificial underground storage. After persistent protests from the public it looks as though the project which has already been prepared—the so-called "No. 27 area" installed near the Yenisey—has been closed. After consultations in the ministry a decision was taken up to the level of universally recognized world practice: The waste should be "solidified" and "encased in glass." This technology is far more costly, but there is no other way out. The amended plan will be subjected to an independent expert analysis to show the population that the plant's safe operation is possible.

So should the RT-2 be constructed or not?

Let us ponder the matter. Nuclear power stations are operating. Consequently used fuel must go somewhere. The capacity of the storage facility in Krasnoyarsk-26 is 6,000 tonnes. As of today there are already 700 tonnes—half of what comes in every year. The storage facility is geared for 25 years.

"If we accept radioactive substances for storage the only way out is reprocessing," asserts O. Bayukov, leading staffer at the Russian Academy of Sciences Siberian department institute of physics. "Otherwise within 20-30 years we shall be choking in this waste."

Doctor of physico-mathematical sciences Ye. Kuzmin, chief of the Institute of Physics Laboratory of the Theory of Solid-State Physics, complains with regret that the difficult problems of a scientific nature are widely exploited by politicians:

"The public is frightened. But not by real dangers but by slogans. Yet the real threat lies in the fact that the politicians who control the state do not understand all the seriousness of the situation. It is depressing that Russia has no state strategy with regard to the prospects for the development of nuclear energy. Are we going to develop it? Wind it down? A very great deal depends on the answer to these questions. Including the fate of production facilities like those in Krasnoyarsk-26."

At the Krasnoyarsk Kray administration I was told that following a ruling from governor A. Veprev a commission of scientists and practical experts has been formed and is working to prepare a package of proposals for the Russian president for the solution of problems connected with the fate of the mining and chemical combine and the elimination of the territory's radiation contamination. Well, you cannot overcome radiation with shouting and slogans. You have to look into matters. To think and decide.

Defense Industry City Tomsk-7 Faces Environmental, Economic Ills

92WN0656A Moscow KOMSOMOLSKAYA PRAVDA in Russian 14 Jul 92 p 3

[Article by A. Chelnokov: "Tomsk-7, What the Film 'The Resident's Mistake' Did Not Tell About"]

[Text] The flashing lights of the GAI [State Automotive Inspectorate] did not allow us to pass the long column, which consisted entirely of closed vans with the inscriptions "Furniture," "Produce," "Incubated Eggs"—in short, everything that they write on ordinary vans that are hauling furniture, produce, and eggs. With just this difference, that ordinary vans do not move in columns of 30 vehicles on intercity trunk highways and, especially, accompanied by a menacing militia escort.

We guessed that the covered vehicles, especially with the militia, may be bringing to Tomsk unenriched uranium or something more biting and more radioactive. More specifically, not to Tomsk but to Tomsk-7, a city that is a relative of Arzamas-16, Chelyabinsk-65, and Krasnoyarsk-26.

A Monster

Recently one of our readers, with the tone of a person who is exposing a defect, telephoned and asked:

"Does the gentleman correspondent know that Tomsk-7 has sent 10 kilograms of plutonium to Canada?"

"Is that right?!"

"It is!...For ten million dollars."

A few days later another woman reader, who could hardly contain herself, telephoned: I have not made up my mind whether to expose the Tomsk-7 authorities who made a secret deal with the French firm Kozhem [transliterated], which wanted to bury nuclear waste in Siberian forests.

Tomsk, a city of 100,000 that is within 10-15 kilometers of Tomsk's half-million people, is obligated to Lavrentiy Beriya for its appearance in the world. It was precisely his finger that, at the start of 1949, jabbed at the blue streak of the Tom River on a map of Siberia, at a picturesque place where a pioneer camp or a vacation house would stand....But the superpower needed superweapons, and there was not a better spot than the Siberian wilderness, so that nuclear production would be concealed from diversionists and enemies of the people. The archtotalitarian regime built at a superrapid pace, and in the summer of 1955 the first reactor—code-named Ivan-1—was started up. The Siberian Chemical Combine, which soon became the largest

secret nuclear station in the country, also was started here. Around it arose a city with two names: Seversk and Tomsk-7.

Not so long ago, back in 1990, the official Soviet data did not mention either the SKhK [Siberian Chemical Combine], or Tomsk-7, or Seversk. The knowledgeable reader probably will recall the film "The Resident's Mistake," where the crafty enemy spy cheats a Soviet youth, who is chasing after easy money, and gives him a trifling task: in a certain part of the Soviet country, sit down on the bank of the stream and, as if passing by, accidentally collect some river water in a little flask and a little soil in a jar.

Surprising as it may be, the film, in which the viewer is told, knowingly or unknowingly, that nuclear production is accompanied by radioactive contamination of the environment, appeared on the screen. The viewer does not notice anything....

But for the first time, official tests in the Tomsk-7 area plunged local society into shock. A certain French laboratory with a complicated name established that the radiation level in the soil close to the aqueduct that goes to Tomsk-7 and into the Tom river was 300 microroentgens per hour (20-fold the natural level). An anomalously high content of cobalt-58, chromium-51, zinc-65, manganese-54, iron-59, and scandium-56, and what was absolutely outright plutonium (Pu-238, Pu-242, and Pu-239/240) was observed in the soil. The report about the forecast of Vanga, who saw a future explosion at Tomsk's reactor No 5, poured oil on the flame. Tomsk was on the verge of panic.

But soon it became known: close to Tomsk-7 were at least eight water reservoirs and basins with moderately active and low-level waste that totaled more than eight million cubic meters in volume; up to 42,000 cubic meters of liquid radioactive waste per day were thrown into the Tom River; 175 cubic meters of waste were pumped hourly into subsurface horizons at a depth of 345-370 meters; and for 1992, the overall figure for pumped effluent was more than 32-33 million cubic meters.

In addition, after the accident at the ChAES [Chernobylskaya AES], people were found who had set themselves the task of comparing the drinking water in Tomsk, the left tributary of the Prilyat, and the Kiev reservoir. They compared....They observed that the cesium-187 concentration in the underground waters of the Tomsk water intake was not lower than in the zones that were victims of the accident....

The Tomsk-7 city newspaper not so long ago took aim with a large number of articles in which former staff workers of the combine told about past discharges not only of waste but of finished product—plutonium-239 and uranium-235. Former senior foreman of the OTK [technical inspection section] Anatoliy Strapshin asserted that nuclear materials of the SKhK that had been thrown into the reservoir and burial grounds were deliberately underreported and concealed by the combine's management, with the knowledge of the ministry, KGB bodies, and the CPSU gorkom and obkom.

The Chocolate City

When the bus arrived from Tomsk Oblast, all the passengers, except for mothers with nursing children, were required to get off and walk through the checkpoint. After a check in a special cubicle, the bus pulled up to the stop on that side in order to take the people along the streets of Tomsk-7. This is called the "regime" here. The concept incorporates a triple cordon of protection at the plants, and four rows of barbed wire, a footprint-monitoring belt, and guard towers around the city, the plant, and the sanitary zone. The area within the barbed wire covered several hundred square kilometers and, it was said, the guards can fire without any warning when violators of this border are observed....

The streets are clean here. You hardly ever meet a drunk here, although many deny this, saying that a Tomsk-7 resident is not fool enough to drink and get bit, it is just that the unkind memory of the former "master" of the oblast, Ye. K. Ligachev, lives on. Prior to his departure for Union circuits he fought against drunkenness throughout the oblast and with such fire that nowadays, throughout all of Tomskiy Kray, you do not look for vodka-liquor or wine production. Everything has been created for an absolutely autonomous existence here: it has its private plots, its own electricity, its own heating, one small food industry, and even theaters—musical comedies and puppet shows—and these are their own.

Before restructuring, Seversk's residents were called nothing else but "chocolates," alluding to their somewhat unsocialistic, full life. Even on the day that we arrived here, the city had received humanitarian help from Norway. It was brought in by those same vans from Novosibirsk: the aid had come by IL-76 aircraft, but the chief of the Tomsk Airport would not risk receiving such a huge thing at his place—vehicles had to be driven to the Novosibirsk port of Tolmachevo, where, it is said, even two Boeings can land at the same time.

Foreigners demanded their good-will trips to secret facilities. They were courteously refused because of considerations of preserving state secrets. But the foreigners did not give up and, as a last trump card, they laid out recollections of Arzamas-16, where the Minister for Nuclear Power himself, who accompanied Yeltsin, had promised them a familiarization walk about Tomsk-7 facilities. The ministry had to be called. They thought about it there and grudgingly authorized the trip. A minimum one....

The Combine

"Railroad ties of old wood, from which the time of radioactive discharges and their amount can be determined, were sent to the Committee for the Ecology."

"Malefactors removed two wheels from a vehicle parked in one of the lots...."

"Glass containers—jars worth a total of about one and a half thousand rubles—were taken from the basement of one of the apartment houses...."

These were events that occurred in Tomsk-7 on the day of our arrival.

Previously, when we lived in a superpower, the word "defense" was understood to mean something like reinforced concrete, something solid, which served as a subject of special pride for each Soviet. Right now, while we are living in the CIS, defense has begun to constrain our movements. Like steel armor on a soldier who has come to a formal dance where the mazurka is performed. "The defense object"—something worse—has been transformed entirely into some good-for-nothing industry, whose production base long, long ago should have been, if not baby carriages, then at least cast-iron stewing pans or frying pans.

The Siberian Chemical Combine itself is not at all a defense object. Yes, for sure it is a detriment to surrounding nature and the population of West Siberia, although SKhK workers are quick to assert that pollutants from the combine are minimal. Yes, there is plutonium, which, despite all the reduction of armaments, continues to be produced here. There is also the probability, although minimal, of an accident, in comparison with which Chernobyl could appear as innocuous as a fisherman's campfire on the Pripyat....All this is enough to fight furiously for elimination of the combine. If, of course, one closes his eyes to the fact that the SKhK possesses a technology for enriching and obtaining the world's purest uranium, which is unique and unlikely to be found elsewhere. And the notorious French firm Kozhem, not entirely out of philanthropy or a desire to savor Siberian exotica, turned here 20 years ago with a proposal to conclude a multibillion contract with a Russian combine that is located in some forgotten godforsaken place.

One can fight for a closing of the combine if one forgets that the heat that its reactors generate for 40 percent of the buildings of the oblast city of Tomsk is still extremely important for Siberia. Heat which, incidentally, is not sufficient for Tomsk-7 itself, whose heating conduits are warmed by an ordinary TETs. They say that during the past winter, when Kemerovo's miners were fighting for a rise in their standard of living, no one supplied coal and their freezing compatriots at Tomsk-7 sat with temperatures of plus 10 degrees in apartments and institutions, at a time when people in the oblast city of Tomsk were not afraid to open their small hinged window openings, even during bitter cold.

It is practically impossible to reconfigure nuclear production—this means that the facilities that produce plutonium are to be subjected to mothballing without restoration—which simply means destruction. As I was told, the program of disarmament, which proposed to dismantle nuclear warheads, will not affect the chemical combine directly, since it was not envisioned that processes convertible to turning out plutonium would be engaged in here.

I confess that I reacted with disbelief to the latter assertion, because I knew already that a reservoir will be built in Tomsk-7 for storing our warheads that have been removed from combat alert, for which purpose the Americans are allocating a total of $400 million. Life is being changed lightninglike, and right now, as I write these lines, it is a generally known fact that warheads are being stored in Tomsk-7. Then every combine worker, be it the director, G. Khandorin, or simply an operating engineer, will deny heatedly the existence of any agreements on this account. So this is what we find here: the local "greens" think that almost all nuclear workers are enemies and liars, while the nuclear workers consider the journalists to be enemy spies....

However, even the "greens" at the combine can be distinguished by their tints: it is said that there are "light greens" and "dark greens"....The "dark" ones are those who fight for almost a return to the stone age and certainly for the destruction of everything that even in the slightest is connected with the atom. The "light" ones are those who recognize the necessity for the construction and operation of AES's but without harm to the environment.

The "facility" has turned out to be an "iron" candidate for shutdown and mothballing in August of this year. A dual-purpose reactor—this is one that both produces the basic product and also fills the role of an AST [nuclear heat-supply plant]—had been placed in a squat building. People in white polyester coveralls met us. While we were zigzagging along corridors, passageways, and stairs, I was extremely and persistently interested in how the matter of the nuclear workers' health is handled. They looked at me strangely but, understanding what disturbed me, they said, do not worry, human passions are not alien to us....

They told me: you wash your hands here after visiting the restroom, and I, in accordance with work safety, did so. In order to avoid misunderstanding...For this same purpose, a personal dosimeter was fastened to the chest of each worker at the reactor. Here the attitude towards the word "caught," which is a frightful one for you and me, seemingly is one of calmness, the attitude that, let us say, the miner has toward the coal dust jammed into his skin pores. Certainly it is justified—for it is impossible to live and work in constant fear of irradiation. Although, they say, the sapper makes a mistake when he stops being afraid....

They leave on pension at age 50, and there is still another feature that is unusual for the country: one does not find pilferers here—the product is too dangerous, control is too strict, and the dosimeters at the checkpoint are too sensitive.

Qadhdhafi Got Tired of Waiting

The explosion at Chernobyl took not only the lives and health of many people, it left hundreds of thousands of nuclear specialists without any prospects. And this also is a tragedy, since if you are an unemployed teacher or physician you have the opportunity if worst comes to worst to engage in partial practice. If you are an unemployed nuclear worker your case is difficult, it is not possible to speak about any partial practice—for you the straight road leads only to sewage workers....

Tomsk is a city of students. It is more of a student city than Moscow, Leningrad, and Novosibirsk combined, since the ratio of students to the city population here is two or three times greater. Thanks to the SKhK, the social status of the students who are preparing themselves to work at the nuclear installations in Tomsk is, perhaps, greater than in any city of the CIS. Alas, right now the road to Tomsk has been closed for them since the shutdown of two reactors, and the combine's personnel policy has been defined by the motto, "Release them all, do not let anyone in." And sometimes they have to be released not just in accordance with their own wishes....

It happened the next morning. After visiting the third reactor, I was lucky to meet 29-year old engineer Sergey Vubarev and 57-year old deputy shift chief Yuriy Viktorovich Gudkin. Both were among those for whom further work in their specialty will not be encouraging after shutdown of the third reactor. Both by no means look happy, although Gudkin told me that he is not specially worried—he is at the pensioner's age, but Serega actually is at a dead end.

"Imagine, Serezha, that you are not facing a correspondent but a colonel of the Lebanese Army. Fantasize that he says to you, a man without a future, the following: 'You will have a cottage in Lebanon, $5,000 per month, and a contract for five years. The work, it stands to reason, is in your specialty—plutonium. Do you agree?'"

"I am afraid that I'd say 'yes'."

That's right! Incidentally, earlier I had managed to hear an unofficial conversation at the combine:

"An atomic bomb for Lebanon? Yes, we can jury-rig one for them in a year, just pay us!"

And when I ventured to doubt what I had heard, they brought up fairly cogent arguments:

"It took Stalin and Kurchatov six years in the 40's to create a nuclear weapon. Now it is the 90's. Brains can be bought, and a reactor also: It is not necessary to build one. There are oil dollars. As for discipline....Qadhafi, as is well known, is no better than Stalin...."

And even Doctor of Engineering Sciences and combine General Director Gennadiy Petrovich Khandorin, giving me an interview, said that he cannot be 100-percent sure about his subordinates. At present, leaving the country under contract is practically impossible for them. What about later?...

But at present we are on the verge of losing a generation of nuclear specialists. And without them we will be transformed into a Burkina-Faso with a nuclear potential—simply a Burkina-Faso that is big, cold, bitter, and forced to start everything all over again. From Stalin?...

Farewell, Arms

When the disarmament business entered the practical stage, I had occasion to visit the Sary-Ozekh proving ground, where our tactical-operational OTR-23 missiles were destroyed under the monitoring of American specialists. The military men nearly cried, watching the column of flame and smoke that were left of the weapons which they had cared for and built and that were considered the last word in domestic missile technology. Today, nuclear "defense objects" are in the same position....

They, the representatives of nuclear "defense objects," like all normal people, are for the liquidation of nuclear arms. But today, when a politician subscribes to an agreement with former opponents about reducing some type of weapon or other, do the nuclear workers think about what the one who puts his signature on the agreement is relying upon? For, while destroying nuclear weapons reserves of the second generation, those same Americans are working strenuously to create a third generation—a guided operation that does not destroy the environment and is capable of destroying targets both on earth and in outer space. What for? In answering this question, each one is free to fantasize in accordance with his own talents.

We are beginning to get accustomed to defeats, be it a game of our unsung, flagless football team or a fiasco in the competition for geopolitical domination. Already they are saying that a filling humiliation is better than a destitute independence. Well, for some, perhaps....But not for you and me. Because we do not endure humiliation for long. The whole historic experience of Russia proves it. And unless we endure, we make a mess of things, because we have become accustomed to flying into a temper with scandal and blows with both friends and those who are not friends.

Tomsk-7 was created and it exists, not for poisoning your life and mine. It helped us to be citizens of a great, albeit destitute, state. And this is not such a little thing.

When the Issue Was Being Composed

The situation at the Krasnoyarsk Mining and Chemical Combine, where plutonium is produced for nuclear weapons, has begun again. A prestrike status, caused by the lack of cash in the city, has been announced here.

For April everyone was issued R3,000 [rubles], and for May R2,000, and then only to half of the collective.

"We can rid ourselves of a second Chernobyl," enterprise director Valeriy Lebedev told the ITAR-TASS correspondent. "A shift that tends a nuclear reactor and is irritated by living disorders can be unpredictable in its actions."

Instruments Buried by Army Blamed for Omsk Radioactivity

PM2107131192 Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian 0500 GMT 16 Jul 92

[From the "Novosti" newscast: Video report by V. Morozova and K. Dudin, identified by caption, from Omsk]

[Text] [Announcer to camera] Buried sources of strong radioactivity have been discovered in Omsk in the vicinity of the airport.

[Morozova over video of woman measuring radiation with a counter] The story of the find is quite simple, really. People digging out a foundation trench for a residential house came across mysterious boxes. They checked out the containers—the counters bleeped. Against a norm of 30 units, the instruments registered almost 8,000 microroentgens per hour. It was the military who left this "present" behind.

[V.A. Kudryavtsev, head of the "Ochag" enterprise, identified by caption] Instruments with various luminous dials used in aircraft were buried here at one time. The luminous material contained radium-226.

[Morozova] Radium-226 is a uranium salt, and all this happened on a site which used to belong to a military unit. Later a residential area grew up nearby.

[Unidentified woman on housing development] Criminals, this is what I call the leadership of that military unit! I am not afraid to use this word. For years they had containers here where they dumped their instruments. Children played with those instruments all over the neighborhood.

[Morozova] Since the military secret has been exposed and the site decontaminated, Omsk's little "Chernobyl" has practically been eliminated. But grounds for concern remain. According to the oblast hygiene and epidemiological center, there are still more than 200 radioactive contamination sites on Omsk's territory. [Video shows site, radiation being measured, various bits of instruments in the ground, Kudryavtsev interview, interview with woman on housing development, children playing, uniformed soldier, truck with hoist]

Army To Field 'Ecological Rapid Reaction Troops'

LD2907044192 Moscow Radio Rossii Network in Russian 0300 GMT 29 Jul 92

[Text] This fall a new type of service is envisaged in the Russian Army: ecological rapid reaction troops. A RIKA correspondent was told this by Russian People's Deputy Valeriy Skripchenko. The troops will be designated for combating the consequences of human activity negative to the ecology. Skripchenko said the need for such units is obvious. He expressed confidence that these troops would also be invited to other countries.

Newsman Unconvinced by Chelyabinsk Nuclear Waste Assurances

PM2907130792 Moscow ROSSIYSKAYA GAZETA in Russian 28 Jul 92 First Edition p 4

[Anatoliy Usoltsev report under the "Thinking Aloud" rubric: "How I Spoiled a Nice Tea Party for Journalists"]

[Text] Chelyabinsk—We had already taken off our white coats, the usual "work clothes" of nuclear scientists, and washed off any possible radioactive dust, and now we were drinking tea offered by our hospitable hosts, workers from the "Mayak" chemical combine, the top secret enterprise for producing weapons-grade plutonium, situated in woodland near the city of Kyshtym in Chelyabinsk Oblast. It used to be absolutely forbidden to speak or write about this zone that was popularly called "Sorokovka." Now the nuclear scientists themselves are inviting journalists to come and see them.

The "Mayak" workers also had a specific reason for organizing this press visit. The nuclear scientists have decided to show journalists the process for vitrifying liquid radioactive waste which has accumulated to excess on the site of the "forbidden zone." Moreover, for decades the local atomic monster used to pour this radionuclide "trash" into sedimentation lakes and special storage pits, and waste generated by the activity of domestic and foreign nuclear electric power stations, nuclear icebreakers, and submarines started to be brought here. The inhabitants of Chelyabinsk did not even suspect that their oblast had long ago been turned into the world's nuclear cesspit. Judge for yourselves: Waste with a radioactive content of over 1 billion curies has accumulated in the sadly notorious Lake Karachay and other sedimentation lakes.

It would be dishonest to say that "Mayak's" specialists are doing nothing to improve the environmental situation in the region. Large-scale work has been organized here to seal Lake Karachay with concrete slabs. Last June a second furnace for vitrifying liquid radioactive waste was brought on line, which enables the waste to be converted into a relatively harmless state for long-term storage. Since coming on line it has processed 51,123,000 curies, which is comparable to the discharge from Chernobyl. This is a kind of landmark and was the formal reason for organizing the excursion and the press conference.

But the "forbidden zone" workers also had a hidden aim. Nor did they conceal this Herculean task. "Through you we want to convince the oblast's population that it is not only safe but also profitable to bring nuclear production waste here and process it," Yevgeniy Ryzhkov, leader of

the "Mayak" production association public relations team, told the newspapermen.

Figures were even revealed to us: The nuclear monopolist plans to earn $40-45 million a year from processing activities. And in order to reassure protesting public opinion, it is prepared to donate some of the profit to the needs of the oblast's population.

So what if the region remains a nuclear cesspit? We will earn plenty of money out of it!

At this point, when the press, relaxed after taking a sauna, was drinking fragrant tea, a local radio reporter unexpectedly approached me with a microphone: "What do you think about what you have seen today?"

I should have answered somewhat more diplomatically. For example, I should have thanked the organizers of the press conference for their frankness and noted their achievements. But, ungrateful person that I am, I blurted out a thought that had struck me:

"I am not sure 'Mayak' workers should trade the health of the people who live around here for the income they will receive."

There was an ominous pause. Everybody fell silent around the table and stopped clinking their spoons. And the feeling of contentment left by the sauna vanished. One of the nuclear scientists broke into the conversation with a harsh remark about the complete ignorance of the population, which suffers from a phobia about radioactivity...

A not particularly diplomatic argument ensued which spoiled the end of the program of our stay at "Sorokovka."

And although as entirely civilized people we smiled and shook hands with each other on parting, mutual incomprehension still existed between us. And, to tell the truth, I was already annoyed at my lack of restraint.

But at the same time how is one to live with one's conscience?

Mineral Found To Be Effective Effluent, Radioactive Waste Filter

PM2907112592 Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian 2000 GMT 23 Jul 92

[From the "Novosti" newscast: Video report by V. Lyashko, identified by caption]

[Text] [Announcer to camera] Industrial extraction of a unique mineral which may help to resolve ecological problems in many parts of the former Union has begun in the Carpathians.

[Lyashko over video of wooded hills] Here, in the vicinity of the Transcarpathian Oblast village of Lipsha, a big deposit of mordenite was discovered several years ago. Scientists' investigations, paid for largely by the local kolkhoz on whose territory the deposit is located, have revealed the amazing properties of this mineral. Tests have shown that filters based on this mineral are unequaled as regards the degree of purification of industrial effluent, nuclear production and nuclear power station waste, and drinking water in ecologically threatened areas.

For a long time the kolkhoz tried to find partners to exploit this deposit. But state structures have been so involved in the division of power that the kolkhoz was forced to begin extraction and processing of this valuable mineral relying on its own resources. This first ton of output is about to be dispatched to the Urals. [video shows wooded hills, a shed, piles of the mineral which looks like sand, a truck]

German Firm To Cooperate in Cleaning Magnitogorsk Pollution

PM1407114992 Moscow Russian Television Network in Russian 1600 GMT 9 Jul 92

[From the "Vesti" newscast: Video report by L. Shesterkina and S. Gordiyenko, identified by caption, from Magnitogorsk]

[Text] [Shesterkina over views of Magnitogorsk] A contract for the construction of a gas scrubbing plant, worth more than $100 million, in the Urals city of Magnitogorsk, known for its dire ecological situation, has been signed by the "Tyazhpromeksport" Metal Combine and the German Krupp-Koppers Company.

The Magnitka will export 50 percent of its metal, while foreign experts will install here the latest equipment which will make it possible to remove all ammonia and 70 percent of sulphur from coke by-product production waste. There is thus a glimmer of hope that Magnitogorsk's air, which is polluted over an area of 10,000 square kilometers around the city, will become cleaner in the future. [video shows views of Magnitogorsk, belching chimneys, contract-signing ceremony, metal combine production facilities]

Ecological Situation in Don Region 'Extremely Dangerous'

LD1307133992 Moscow ITAR-TASS in English 0844 GMT 13 Jul 92

[By ITAR-TASS correspondent Vyacheslav Bondarenko]

[Text] Rostov-on-Don, July 13 (TASS)—Rostov region's state health service chief medical officer, Tamara Kondratenko, addressing a specially summoned press conference, described the ecological situation in the Don region as extremely dangerous. According to her, everything the residents of the region come in contact with presents danger for their lives.

Dust concentration in air in cities is over ten times the permissible norm, one litre of Don water contains bacilii causing intestinal disorders ten times above normally acceptable, fresh vegetables have nitrates and meat does not lag behind in antibiotics.

There is a widespread danger of a cholera epidemic breaking out due to the pollution of the Don and the Northern Donets by sewage discharge into their waters. Thirty diphtheria cases have already been registered, including one with lethal outcome. Excessive price rise of soaps and Russian bath-house service charges are creating favourable conditions for a massive pediculosis breakout.

Yakutia Suffers From Dam Construction, 'Secret' Nuclear Blasts

92WN0666A Moscow MOSCOW NEWS in English No 27, 5-12 Jul 92 p 3

[Article by Mikhail Nikolayev, president of the Republic of Sakha (Yakutia): "Yakutia's Own Chernobyl"]

[Text] Paradoxically, neither the state coat of arms, flag, nor national anthem of Yakutia features or mentions diamonds, despite the fact that practically all Russian diamonds originate from the Republic of Sakha.

Indeed the people of Yakutia never sang paeons to the precious stone which abounds in this land and which is the object of national pride for other states.

In fact, the brilliancy of diamonds blinded officials from ministries concerned with their prospecting and extraction. I still have a clear mental vision of those explorers of the North. Here is an example giving an idea of the priorities recognized during that exploration: the number of horses and deer used in conditioning diamond fields for development was meticulously registered, but the number of local people involved in the project is still uncertain.

Extraction of diamonds is a labour-consuming and power-intensive business. Some person conceived the idea of building a hydropower plant on the nearest large river, the Vilyui. That date should be recognized as a black day for the Yakuts for whom the river means more than all the treasures of the world. The Vilyui is Yakuts' national pride, an object of love and adoration.

There are several hydropower plants on it now, and more are being built. Builders were in such a hurry to build them that they forgot to remove the forest from the bowl of the water reservoir. Submerged taiga started to rot and poison life in the river, which became too shallow for navigation down from the reservoir. The fish vanished. Elks, bears, sables, and ermines became rare in the land. The water of the Vilyui is polluted with copper, phenol, and petroleum products and therefore no longer potable. Diamond miners operating in the river's upper reaches have been dumping almost 60 million cubic metres of highly mineralized underground water and solutions into the Vilyui.

The evil Sea of Vilyui has driven away the indigenous peoples. Before the Sea was formed there were 650 Evenki in the Sadynsky District alone. Nowadays there are less than 150 Evenki in the whole Mirny Region (incorporating the Sadynsky District), and many of them are rapidly giving up their traditional lifestyle.

For Yakuts living in harmony with nature the impact of the Vilyui catastrophe is as bad as Chernobyl was for East Europeans.

The ecosystem of the Vilyui has suffered fatal changes. Local people are suffering from diseases previously unknown here. There are unheard of climatic and hydrological anomalies.

In the '70-80s dozens of nuclear explosions were carried out in secret in the Vilyui area. Environmental stress has shown a heavy toll on local people ever since. They are disheartened because they don't see how the land's problems can be solved, and because of the irresponsible behaviour of industry.

However, there's been a certain change for the better: something is already being done to improve the natural environment. Nearly 40,000,000 roubles were invested in nature conservation in the Vilyui area last year alone. Since 1991 all projects have been screened for ecological harmlessness.

The Supreme Soviet has announced the territory nuclear free. This means a ban on nuclear tests, the use and storage of nuclear charges and waste, and the construction of nuclear power plants. However, the local population—aware of nuclear tests in the past—demand public medical and ecological checks. Not long ago our government passed a special decision to make up for what was virtually enforced resettlement of part of the population as a result of environmental damage. We are pressing organizations operating here to change their attitude towards the northern environment.

Perhaps the entire worth of the diamonds is not enough to make up for the damage done to the Vilyui by greedy ministries. At any rate, at least some of the damage to public health must be compensated with money from the sale of Yakutian diamonds.

The market alone is unlikely to resolve the matter. We must use relations which still exist between the ministries and territories to improve the situation.

Elimination of the contrast in living standards between the diamond miners and residents of agrarian territories populated mainly by indigenous peoples is another priority for the government.

The catastrophe of the Vilyui shows that rich lands can sometimes be vulnerable nonetheless.

Survey of Dumped Chemicals in Baltic Needs Government Go-Ahead

PM1507085992 Moscow IZVESTIYA in Russian 14 Jul 92 Morning Edition p 1

[Sergey Krayukhin report: "Specialists Ready To Save Baltic, but Still Lack the Money"]

[Text] St. Petersburg—Yu. Semenov, vice president of the "Ekobaros" Coordinating Council, has reported that large and small hydrographic vessels of the Russian Navy are prepared to put to sea to search and survey sites where chemical agents were dumped on the floor of the Baltic.

These ships are equipped with everything they need to find the munitions, which could be buried quite far down in the silt, and to bring them up safely to the surface. The expedition comprises nine groups of top-notch experts in various areas—specializing in particular in the separation of explosives and toxic materials.

Following the hearings at the Russian Supreme Soviet, where a report was delivered by St. Petersburg Vice Mayor V. Shcherbakov, coordinator of the "Ekobaros" program, a decision was made to support this maritime expedition and to place overall leadership of the work with the State Committee for Emergency Situations. It was planned to begin the expedition 14 July, but, Yu. Semenov stressed, the Russian Government has not yet signed the relevant draft, and until this happens we cannot start implementing it. The work under the "Ekobaros" program is of not just general state importance, but of international importance.

The Coordinating Council is concerned about reports in the mass media lately about maritime expeditions being gotten ready to survey sites where chemicals and explosives were dumped in the Baltic. We believe, Yu. Semenov said, that Russia is not rich enough to carry out a whole series of simultaneous expeditions with identical aims.

Expedition Reports Normal Ecology in Pechora Sea

LD3107094692 Moscow ITAR-TASS in English 0801 GMT 31 Jul 92

[By ITAR-TASS correspondent Vasiliy Belousov]

[Text] Murmansk, July 31 (TASS)—The ecological condition of the Sea of Pechora is relatively normal, an international scientific expedition which examined the biological and ecological situation on the coast of the Arctic Ocean and neighbouring Arctic islands, reported.

Prominent scientists from Russia, the United States, Norway and Denmark took part in the expedition. Professor Gennadiy Matishev, director of the Murmansk Biological Institute for Marine Research, told TASS this was the first expedition in the history of former Soviet Arctic research.

The "Dalyniye Zelentsiy" research vessel took hundreds of dimensions, thousands of samples from the sea bottom and the coast. The samples will be thoroughly studied at special laboratories in the countries that took part in the expedition, after which the final conclusion will be drawn. According to preliminary estimates, the situation in the area is relatively normal, Matishev said.

Caspian Research Council Predicts Widespread Flooding in Next Century

92WN0646B Moscow ROSSIYSKAYA GAZETA in Russian 6 Jul 92 p 3

[Article by Arif Useynov: "Ecology: The Caspian: Warning of Danger"]

[Text] By the year 2020, the sharply rising level of the Caspian will reach a catastrophic level—with its waters rising by another four to five meters. Such is the operational forecast of the republic Academy of Sciences' research council on Caspian Sea problems.

The Caspian's waters will swallow up farmland and people's homes, and smooth water will extend for thousands of kilometers. The waters will wash up against houses in the villages down the coast from Sumgait. The greatest danger is that the oil-drilling platforms, wells, and pipelines built in the Caspian in recent decades will be submerged. If the oil installations end up under water, the Caspian will turn into a cesspool for petroleum products in the coming years.

The scientists are proposing the urgent establishment of a special agency for protecting the coastal areas of the Caspian. It has been deemed expedient to pump a minimum of 10,000 cubic meters of water a year into the now dried-out Komsomolets Gulf, in the northeastern part of the Caspian. Nor is there any doubt about the need to move excess water from the Caspian into the dried-out Aral Sea.

Yeltsin Inspects Farmland Damaged by Volga-Chogray Canal

LD2307101592 Moscow ITAR-TASS in English 0927 GMT 23 Jul 92

[By ITAR-TASS special correspondents Luydmila Aleksandrova, Nikolay Styazhkin, Pavel Shamrayev]

[Text] Elista, Republic of Kalmykia, July 23 (TASS)—President Boris Yeltsin, who arrived in Elista on Wednesday, familiarized himself with the state of farming in the republic.

He began his morning with a helicopter trip to inspect part of the Volga-Chogray Canal, the construction of which was suspended a few years ago. The abandoned

canal area has turned into an ecological disaster area with millions of cubic meters of sand dug out of the virgin land of the steppes carried by wind to the once lavish pasturelands-turned-desert.

The president was shocked by the sight of ecological damage done to the fertile black-earth area of millions of hectares near the Caspian Sea. Mismanagement turned much of the area into a semi-desert wilderness.

The president then had a substantial discussion of ways to revive the area with the Kalmyk leaders and specialists of the agro-industrial complex.

In the afternoon, the president is due to fly to Omsk (Western Siberia) on the last leg of his three-day tour of Russia.

Selenginsk Plant Halts Sewage Discharges Into Lake Baykal

92WN0678A Moscow ROSSIYSKAYA GAZETA in Russian 22 Jul 92 p 4

[Interview of Vladimir Geydebrekht, director of the Selenginsk Pulp-and-Paperboard Combine, by Genadiy Gypylov (Selenginsk, the Buryat Republic): "The Lake Must Get Somewhat Better"]

[Text] **An uncommon fact: The Selenginsk Pulp-and-Paperboard Combine is now operating in a closed cycle of water recycling and does not discharge a drop of industrial effluent into Baykal. (But formerly it dropped into the lake more than 15,000 tons!) It has been working like this since August of '90.)**

But do not rush to accuse the journalists of yawning at a remarkable event. The enterprise's management simply did not hurry with its report. And only when the technology was broken in and the management was convinced that the cycle was operating reliably did combine director Vladimir Geydebrekht agree to an interview.

)part, should serve mankind. Formerly we were always criticized and even cursed at for such a "technocratic" thought. But now today I think the same: the republic's riches must be used competently. As for the closed cycle....For a long time, a very long time, we sought a solution of this problem, which is extremely complicated technically.

We went gradually to full purification of the effluent. The combine began to operate in 1973 and has discharged into the lake more than 65,000 cubic meters per day. By 1987 it was about half that, and in 1990 there is not even a drop.

[Gypylov] How did the work go?

[Geydebrekht] The All-Union Scientific-Research Institute for Paper, together with our designers from Sibgiprobum [Siberian Institute for the Design of Pulp-and-Paper Industry Enterprises], developed the master plan. Unfortunately, much time passed before an engineering solution was prepared and passed through the scientific reviewers....There were also unsuccessful steps. They forced us to change tactics. A temporary scientific collective was created at the combine under Corresponding Member of the Russian Academy of Sciences Mikhail Grachev, to which Buryat, Irkutsk, and Novosibirsk scientists, as well as the designers, came. The results are on hand.

[Gypylov] Is it true that you have surpassed world standards in certain parameters of ecological safety?

[Geydebrekht] Exactly so. Today we are the only enterprise in the world with such a cycle. It is true, we can be rebuked for something else. The fact is that we have a big thermal electric-power plant, which provides heat not only for production but also for the city. It operates on coal—that means there are discharges of dust. We have already done much: whereas five years ago we discharged more than 30,000 tons of various elements into the atmosphere, today the figure is 9,000. Unfortunately, these problems are becoming increasingly difficult to solve: our economic potential is not growing. And this can lead to bankruptcy. Then we will not be worrying about the air's cleanliness.

A Necessary Postscript.

Still more must be done to assure that "the lake will become a preserve, so that its waters will not be polluted with pulp," as Voznesenskiy writes.

The Baykal Pulp-and-Paper Combine is on the Irkutsk shore. For a long time a discussion has been going on about the fate of this enterprise—close it or reconfigure it? Recently the tone has become especially simple. But not entirely because we finally are drawing nearer to the truth, to a final solution. No, it is simply that, taking advantage of democracy and deriving stubbornness from their semiknowledgeability, the "greens" are constantly arranging meetings, marches, and conferences. And the pulp workers fight them off.

The deputies? Ninety percent of the deputies of the Irkutsk and Ulan-Ude parliaments take their cues from the voice of the electors, promising "to save Baykal." So now—"from session to session the happy ones live merrily....". At the last—the April—session of the Irkutsk Oblast Soviet of People's Deputies, which was dedicated specially to the BTsBK [Baykal Pulp-and-Paper Combine], I heard from the deputies the forgotten "demand," "require" and "charge"....It is well known whose lexicon this is. Previously, someone was afraid to lose his party card and so did something. And now? There are no party cards, but Baykal remains.

And there is more. The group of specialists who developed and introduced the closed water cycle at the STsBK [Siberian Pulp-and-Paper Combine] was promoted last year in the competition for the state prize in the area of science and technology.

U.S. Ecologist Proposes Plan To Develop Baykal Region

LD2207083592 Moscow ITAR-TASS in English 0748 GMT 22 Jul 92

[By ITAR-TASS correspondent Andrey Fomin]

[Text] Chita, July 22 (TASS)—A region-wide discussion of a programme for the development of the Baykal area, drafted jointly by Russian and American scientists, has begun in the city of Chita and outlying territory. The programme was officially presented to local residents by one of its authors, George Davis, a remarkable businessman and ecologist, who arrived from the United States for the purpose.

Mr. Davis and his Russian and American colleagues met members of the public and the region's leaders. They spoke about the main provisions of the programme aimed at combining the region's intense economic development with dependable ecological protection of Lake Baykal and adjacent territory.

Davis told journalists that the Baykal programme was supported by many inhabitants of the Chita region and representatives of the local administration. Along with this he noticed that when discussing the "Davis Project" the region's leader pointed to some shortfalls in the economic part of the project. They were also wary about the idea of setting up an inter-territorial Baykal Commission, which could restrict the authority of the local administration.

Environmentalist Attempts To Save Disputed Kuril Islands

OW1907045392 Tokyo KYODO in English 0405 GMT 19 Jul 92

[Text] Tokyo, July 19 (KYODO)—Seen through the green-tinted lenses of Russian environmentalist Sergey Sheveiko, the four disputed islands off Hokkaido look like the Hawaii of the northwest Pacific.

The islands—seized from Japan by the Soviet Union at the end of World War II—have dozens of panoramic volcanoes, abundant natural resources, and rare wildlife, including endangered sea otters.

The only catch—vacationers take note—is that the sun rarely blazes through the fog that hugs the rugged isles for a good part of each year.

This does not faze Sheveiko, the founder and former chief of Far East Ecology at the Leningrad (now St. Petersburg) Urban Planning Institute, who says the politically problematic isles are a paradise for putting to test his vision of a new environmental order.

"The political dispute is a vehicle to protect nature," declares the 39-year-old marine biologist, stressing that he has no personal political ambitions. "People and resources, not the demarcation of political boundaries, are what count."

As a result of the diplomatic tensions, the islands have received wide publicity, so the idea of establishing an international trusteeship may take root, he said during a visit to Japan.

On the other hand, if Russia and Japan can agree to relinquish the territory to an international regimen that will allow them both to profit from environmentally friendly development, they may find it easier to settle the prickly diplomatic tiff, Sheveiko says.

The territories with a total area of about 5,000 square kilometers—bigger than metropolitan Tokyo plus neighboring Kanagawa Prefecture—have been the main obstacle to drawing up a Russo-Japanese peace treaty and the full normalization of relations.

With a sketchy plan, a draft report on the islands' ecology, and heaps of infectious enthusiasm, the professorial Sheveiko can be found these days plying the airways between Japan, his new home in the United States, and the Russian Far East, lobbying for his project.

Sheveiko's unusual journey began three years ago after a brief visit to the United States where he began to learn about building environmental coalitions.

He returned home with six cartons of books, only to realize that U.S.-style environmentalism could not be transplanted to his country because of the vastly different political systems.

Instead, he decided to meld together the best of Russian, American, Japanese, and other conservation strategies and work toward transforming competition for territory into cooperation for shared benefits.

Last year, joined by his physicist wife and 14-year-old son, Sheveiko moved to the suburbs of Washington, D.C., and on a shoestring budget founded World Waters Project, a global program aimed at protecting coastal waters in areas where there are international territorial disputes.

"It would be too late to get involved after a territorial dispute is decided," said Sheveiko, who worries that helter-skelter development under Russia's new economic liberalization could destroy the delicate ecological balance of the resource-rich isles.

"World Waters wants to work now to protect threatened ecosystems and native people so that their survival is guaranteed after the land dispute is resolved," he said.

Also on World Waters' agenda are the Falkland Islands, disputed by Argentina and Britain, and a coral reef corridor off Nicaragua, Costa Rica, and Venezuela.

Already, Sheveiko says he has found allies among some residents of the disputed islands who worry that an

upcoming gold prospecting project could pollute rivers, destroying the breeding ground for the 25,000 tons of salmon harvested in the vicinity each year.

Oil drilling in nearby Sakhalin is another concern, says Sheveiko. A major spill would be certain to affect Japan, and could also reduce the area's annual 1.5 million ton fish catch, accounting for one-fourth of all fish consumed in Russia, he asserts.

While he admits being foggy on details of how to turn the territories into an internationally managed zone, Sheveiko says it is high time to start planting the seeds.

This fall, Sheveiko plans to lead an expedition of Russian and American scientists to survey the islands' ecological resources, to be followed by a second group next year joined by Japan.

"It's a unique time. We are starting to live in a new world," he told a Japanese environmental group at the start of a nationwide tour to meet with politicians, scientists, and citizens activists, and to talk to Ainu people who he would like to help settle claims to the islands as their original inhabitants.

"If we don't start now, who will start?"

WESTERN REGION

Ukraine Scientists Report Mass Death of Marine Life in Azov Sea

LD1507080592 Moscow ITAR-TASS in English 2048 GMT 14 Jul 92

[By UKRINFORM correspondent Vladimir Yeremenko for TASS]

[Text] Berdyansk, July 14 (TASS)—Ukrainian ecologists recently reported mass death of fish, shrimps and crabs in the Azov Sea.

Scientists believe it is a result of a hazardous discharge into the sea by one of the local factories. However, no traces of poisonous substances were found in the fish, according to the results of a laboratory test.

This is the second such incident in the last two years. Last time, scientists believed the mass death of fish was caused by the unusually warm water, the temperature of which reached 25 to 27 degrees centigrade.

However, this time the temperature of the sea water remained below 20 degrees Celsius.

Dniester River Polluted by 100 Tons of Transformer Oil

LD3107195492 Moscow Radio Rossii Network in Russian 0500 GMT 31 Jul 92

[Text] The River Dniester must be added to the long list of casualties from the conflict in the Dniester region. This was stated at a Moscow news conference by Vladimir Trubnikov, general director of the Russian Civil Rights Foundation, who has returned from a trip to the conflict area.

He said that transformers at the Dubossary hydroelectric power station were damaged during artillery bombardments. As a result some 100 tons of oil flowed into the waters of the Dniester. According to Trubnikov, this is a real ecological disaster, since at least 6-7 years of gradual treatment will be needed to remove the harmful effects of the transformer oil on the river's flora and fauna.

Government Decision Increases Protection of Forests, Plants

LD0508151192 Kiev Ukrayinske Radio First Program Network in Russian 0900 GMT 4 Aug 92

[Text] The Ukrainian Cabinet of Ministers has adopted a decision on the responsibility for damage to forests and plants. In order to reinforce protection, the fine for material responsibility for damage to trees and woods in towns and settlements and for infringements of forestry legislation has been increased by twenty-five times.

Decree on Chernobyl Nuclear Plant Shutdown

925D0594A Kiev URYADOVYY KURYER in Ukrainian 17 Jul 92 p 9

[Decree No. 366, issued by the Ukrainian Cabinet of Ministers and dated 1 July 1992: "On Shutting Down Operations at the Chernobyl AES"]

[Text] In order to carry out Decree No. 1726-XII, issued by the Ukrainian Supreme Council [Rada], dated 29 October 1991, and entitled "On Urgent Measures To Be Taken in Connection with Shutting Down Operations at the Chernobyl AES," as well as for the purpose of securing this nuclear power station and making it safe, along with working out social protection for those production workers to be released from their jobs, the Ukrainian Cabinet of Ministers hereby **decrees** the following:

1. The Ukratomenergoprom Concern, together with the Chernobyl AES Production Association, shall provide for and ensure the shutting down of Power Units 1 and 3 in 1993. The comprehensive engineering staff employed at this nuclear power plant during the years 1992-1995 shall work out a technical plan for shutting down operations at the plant and shall begin to implement it.

The fact that this nuclear power plant's other power unit was shut down in 1991 shall be taken into account.

2. The Ukrainian Ministry of Power Engineering and Electrification—operating in tandem with the Ukrainian Ministry for the Protection of the Population from the Consequences of the Accident at the Chernobyl AES, the Ukrainian Ministry of State Resources, and the

Ukratomenergoprom Concern—shall set up a specialized construction-and-installation administration in 1992 for the purpose of performing operations in connection with shutting down the Chernobyl AES. This administration shall be supplied with the necessary construction equipment, machinery, and mechanisms, and shall recruit the skilled staff of workers, engineers, and technicians that it needs.

As to problems which require solution by the Ukrainian government, proposals and motions shall be made to the Ukrainian Cabinet of Ministers.

3. The Ukrainian State Committee for Nuclear and Radiation Safety shall prepare and implement during the years 1992-1993 norms and rules to deal with the problems of providing and ensuring nuclear and radiation safety during the time period when the Chernobyl AES is being shut down. Problems involving radiation safety shall be reconciled with the Ukrainian Ministry of Health and the Ukrainian National Commission on the Protection of the Population from Radiation.

The Ukrainian Academy of Sciences shall provide and ensure a scientific and technical expert opinion as to the nuclear and radiation safety of the engineering solutions for shutting down the power units of the above-indicated nuclear power plant.

4. The Chernobyl AES Production Association shall retain for 1992-1993 the same actual number of workers as any other power unit of this nuclear power plant.

In order to prevent an unregulated or uncontrollable outflow of personnel, the wages and salaries of those employees of the Chernobyl AES who work in the isolation zone during the years 1992-1994 shall have their basic remuneration rates tripled.

During the period when the Chernobyl AES is being shut down the average wages or salary for those workers from the closed-down power units, as well as those from the Ukrittya facility (without considering or figuring in the brief increased level which has evolved at Ukraine's presently existing nuclear power plants.

5. The administration of the Chernobyl AES Production Association shall be permitted to convert employees at this nuclear power plant—upon their own consent—to contractual-type working agreements.

Medical services shall be provided and—in case of necessity—rehabilitation and treatments at sanatoriums or health resorts for those workers discharged in connection with shutting down operations at the electric-power plant. And this shall be done in accordance with agreements provided for employees at existing nuclear power plants.

6. The Ukrainian Ministry of Labor, Ukrainian Ministry for the Protection of the Population from the Consequences of the Accident at the Chernobyl AES, the Ukrainian Ministry of Investments and Construction, and the Ukratomenergoprom Concern over the course of 1992—in tandem with the Slavutych Local Executive Council of People's Deputies—shall work out and submit to the Ukrainian Cabinet of Ministers a program for providing employment for those workers being discharged from the Chernobyl AES and the population of the town of Slavutych.

7. The Ukrainian Ministry of Finance shall see to it that annual reports are submitted to the state budget concerning the final, targeted funds allotted as expenditures for maintaining structures and installations for the shutdown power units and the Ukrittya facility, as well as for the social needs of the collective at the Chernobyl AES.

8. The Ukrainian Ministry of Economics, Ministry of Investments and Construction, and Ministry of State Resources shall provide annual reports on the allocation of centralized capital investments and material-technical resources for conducting work relative to shutting down operations at the Chernobyl AES and finishing up construction work at the town of Slavutych.

9. In connection with shutting down operations at the Chernobyl AES and the need for additional electric-power production at thermal, i.e., coal-fired electric-power plants, the Ukrainian Ministry of State Resources—together with the Ministry of Electric-Power Engineering and Electrification—shall resolve problems concerned with providing them with a guaranteed supply of fuel during the second half of 1992 and in 1993.

The Ukrainian Ministry of Power Engineering and Electrification shall make the necessary preparations to speed up the construction and putting into use of ecologically "clean" facilities which utilize the advanced technology of foreign firms to good advantage.

Chernobyl Reported Preparing for Operation

LD0508154292 Moscow Teleradiokompaniya Ostankino Television First Program Network in Russian 1400 GMT 5 Aug 92

[From the "Novosti" newscast]

[Text] The KHARKOV-NOVOSTI agency reported today that, according to a statement by Ukrainian ecologists, the power units of the Chernobyl nuclear power plant are being prepared for operation despite Parliament's decision to the contrary. The ecologists are also alarmed by a report by a representative of the plant which says that the process of the destruction of the sarcophagus is continuing.

CAUCASUS/CENTRAL ASIA

Azerbaijan Produces New 'Conceptual Document' on Environment

92WN0697A Baku BAKINSKIY RABOCHIY in Russian 17 Jun 92 p 2

[Interview with A. E. Mansurov, chairman of the Republic State Committee on Ecology and Control of

Natural Resources, by Azerinform correspondent Kh. Imanov; date and place not given: "Azerbaijan's Ecology: The Present and the Future"]

[Text] **A group of the republic's eminent ecologists has drawn up a document that is crucial to Azerbaijan's future—an Ecological Conception of the Azerbaijan Republic. Here is our interview with A. E. Mansurov, the chairman of the Republic State Committee on Ecology and Control of Natural Resources, under whose editorship the Conception was prepared.**

[Imanov] *Arif Bey, I believe this is the first time such a document, which conceptually reflects Azerbaijan's state policy regarding environmental protection, has been prepared in the republic. How does it differ in principle from numerous previously adopted programs and doctrines?*

[Mansurov] As you know, we talked about ecology for decades. But as for any system...! It got to the point where the managers of plants and associations polluting the environment wound up on the Supreme Soviet Commission on Ecology. It turned out that those responsible for cleaning up were irresponsible. Almost like in Mark Twain, if you remember.

The main difference, I sincerely believe, is that the present Conception was drawn up with a deep faith in its feasibility, and the people who took on this big job are genuine patriots of Azerbaijan. This is why I am certain that with the help of the republic's leadership the Conception will be systematically implemented according to plan. It simply can't be any other way, it must not be any other way!

[Imanov] *In other words, your word is your bond?*

[Mansurov] Absolutely and unconditionally. After all, decisions, decrees and programs which were scientifically correct used to be adopted earlier as well. But things never went beyond fine slogans. Things are different now. We need decisive action. Speaking for myself, the State Committee for Ecology and Control of Natural Resources and the Azerbaijan Greens Party will do everything they can to realize all of the Conception's provisions. This is what its drafters wanted, and I think the same is true of all civic movements and every citizen of the republic.

As for the purely scientific features of the Conception, let me say that it is based on the latest advances in ecological science, taking account of both mankind's accumulated experience and historically tried and true principles of the harmonious development of human production activities and the environment. The drafters also, of course, took account of the specific character of Azerbaijan and the whole Transcaucasian area. Let me make special mention of several world-class scientists among the large drafting collective—people such as Urkhan Alekperov and Rafik Kasimov, highly qualified specialists like Oktay Dzhafarov, Asad Kyazimov, and Fikret Dzhafarov. Many useful ideas were suggested by young scientist in the Greens Movement.

Another thing. The Conception is totally free of any dogmas; it is not politicized. Everything in it serves just one purpose—to save our homeland's environment and the people living here from the looming ecological catastrophe.

[Imanov] *Is the situation really that serious?*

[Mansurov] That's putting it mildly. The situation today can be characterized as critical. But even more frightening is the fact that problems of developing and equipping the environmental organizations—even the State Committee itself—have not been dealt with at all, you might say. And now we have to reap the fruits of this very short-sighted, one might even say negligent, policy. As you know, we are a truly budget-funded organization. Just creating one Karabakh National Park, for example, will require 15 to 20 million rubles, and we have plans for creating several such parks. No one has wanted to think about the future. Remember the story of the Topkhana? At the last moment, our poor excuses for leaders started fussing about its status. Yet it is a national treasure which belongs not only to our people but to the whole civilized world. So it turns out that this thoughtless approach to our selves and disrespect for our own dignity have led to catastrophe.

[Imanov] *Arif Bey, would you characterize briefly the overall ecological situation in Azerbaijan.*

[Mansurov] It has become much worse recently. The level of air pollution in the big cities exceeds maximum norms by several times, the problem of Caspian Sea pollution has been made much worse by the catastrophic rise in its level, the scarcity of fresh water is growing worse, and processes of erosion and deforestation are rising. An especially difficult situation is developing in the agricultural areas of the Kura-Araks lowland and the Lenkoran-Astara zone. The monoculture cultivation of cotton and vegetables has resulted in severe contamination of the soil with pesticides, which are leaching into the ground water and sources of drinking water. Unfortunately, this list of problems could be prolonged. Azerbaijan is classified among the ecologically critical regions of the former USSR.

[Imanov] *What has brought us to this deplorable condition?*

[Mansurov] Many ecological problems are rooted in the structure of the republic's economy as it has developed historically and remains to this day. The basis of our industrial potential remains oil and gas extraction, oil refining, chemicals, and sectors related to them. The overwhelming majority of these enterprises, which demand great quantities of water and energy and which produce large quantities of harmful emissions, are clustered around Baku and the Sumgait industrial zone.

But blaming it all on structure is oversimplification. Enormous damage has been inflicted by 74 grievous years of totalitarian rule. The policy of "grab everything and give nothing in return," the colonial treatment of

Azerbaijan's resources—and not just Azerbaijan's either—and the deliberately created disproportion both in industry and in agriculture—all of these could hardly fail to damage the ecology of our rich and abundant homeland. In the agroindustrial complex, for example, in the pursuit of setting records to be rewarded by the communist regime, we ignored natural and climatic conditions, the scientific principles of land use and cultivation, and the simple experience of the peasants. As a result, we lost techniques of agricultural production and traditional crops developed through centuries of evolution, things to be found only here in this republic.

Only the connivance of the leadership of the disintegrating Empire can explain the extraordinary situation that has developed in our waters and, in particular, the Araks River below where the left tributary of the Okhchuchay river empties into it. For many years, without penalty, before the very eyes of the environmental organs of the former Union, the enterprises of Armenia dumped toxic wastes in the river. In the Okhchuchay the concentration of heavy metals exceeds the maximum permissible by 100 (!) times or more.

In the space of an interview it is impossible to talk about all the factors and causes affecting the environment. Let me just say that they have all been thoroughly described and analyzed in the Conception.

[Imanov] *Arif Bey, what do the drafters of the Conception propose to stabilize the ecological situation?*

[Mansurov] Any conceptual model must be based on principles that have been substantiated and tested in practice. Our Conception is based on the laws and statutes which have been approved by the international community to serve as the basis for environmental protection and the rational use of natural resources.

[Imanov] *What are these principles?*

[Mansurov] First, protection of the biosphere. We must reduce, and we will try to eliminate, all emissions which pollute the air and water and which damage the land and its inhabitants. Second, continuous use of natural resources. We must try to make continuous use of renewable natural resources such as water, soil, and forests. Third, reduction and elimination of wastes. Fourth, rational use of energy. Fifth, reduction of risk. We must reduce the risk to the health and safety of our citizens and lands through the adoption of safe technologies, the correct organization of industrial production, and constant readiness for emergencies. Sixth, the marketing of safe products and services. We must see to it that the kinds of products and services provided to our customers are hazard-free in terms of health, environment, and their use. Seventh, compensation for losses. We must take responsibility for any damage done to the environment and make every effort to rehabilitate it fully. Eighth, glasnost and public information about how things stand.

And, finally, ninth: evaluation and yearly inspection. Every year we will evaluate the work that has been done and the state of the environment; we will set up independent environmental procedures and inspections and make their findings known to the public. These, in brief, are the principles our Conception is based on.

[Imanov] *Arif Bey, even a nonprofessional understands that it will take titanic efforts and enormous funding to realize these principles.*

[Mansurov] You are right. The thoughtlessness and hackwork—sometimes criminal—committed by our predecessors and contemporaries have placed us in a supertough situation. It is always easier to destroy than to rebuild what has been destroyed, but we have to do it. The question, literally, is this: will we survive? There is no other way.

Funding is needed, lots of it. We can't be stingy about it. As the saying goes, the miser pays twice. In most cases, it could happen that by being stingy the first time there simply won't be a second time, it will be too late. As for the efforts, they can be joint efforts. It is always easier to work together to get out of a jam. The Conception states that in the field of environmental protection, the Azerbaijan Republic's foreign policy must be shaped on the basis of international cooperation. We already have a certain amount of experience in this. I am referring to the International Conference To Save the Caspian, and its findings. Today's independent Azerbaijan will have to implement active policies to discuss and sign international ecology conventions and treaties which will also help to resolve many of our internal problems.

We already have precedence for such policies. An Azerbaijan delegation took part for the first time in the UN World Conference on the Environment and Development. Delegations from many countries of the world went to Rio de Janeiro to map out future global cooperation among the industrially developed and the developing countries in the field of ecology. In our future activities we will continue to pursue the course of international cooperation on the basis of equal partnership. In this, I think, we will find genuine support from the government, despite the resistance put up by certain leaders.

To be specific, let me cite one example. Despite the negative conclusion of the State Committee for Ecology and Control of Natural Resources, the Azerbaijan Republic's governmental delegation to the conference of CIS representatives in Moscow, on 8 February 1992, signed a treaty on creating an interstate ecological council and a working body—a council secretariat. We perceived in it the danger of a revival of all-union structures, and we believe that the creation of such an institution will infringe upon the republic's interests. What we need now is to pursue bilateral agreements with all the countries of the world and various international ecological organizations.

[Imanov] *Solutions to many global problems as stated in the Conception will undoubtedly infringe upon the interests of the "powers of that be." Which means that some "muscle" will have to be used, based on the law....*

[Mansurov] You have touched upon a theme that is painful to us. The fact is that the environmental legislation of the former Union was merely declarative in character and was not consistent with the prohibitions of international conventions. The same oversights are to be found in the republic's laws. To this day we have not established a process for converting republic and local organs of administration to fee-paying use of natural resources; we have yet to introduce economic methods when it becomes necessary to prevent deterioration of the ecology; we have yet to determine the sources for financing environmental protection. There are omissions in regard to investment policy, there are no ecological normatives and restrictions on hazardous production operations, and so on.

Our State Committee has come out with a legislative initiative reflecting a package of documents regulating basic problems of environmental protection and the use of natural resources. These documents are based on the Azerbaijan Republic Law "On Environmental Protection and the Use of Natural Resources." The legislative documents that have been submitted to Azerbaijan's parliament for examination represent just the first steps in bringing environmental legislation into line with international norms.

I am happy to report that Azerbaijan's Milli Medzhlis (parliament) has accepted our legislative initiatives despite the fierce opposition of certain former leaders of high rank. Let me mention that formerly, many officials of ministries, departments, associations, and enterprises, seeing the republic leadership's disdainful attitude toward the needs of ecology, took the liberty of acting in the same way. I have been working more than a year in the State Committee, and in that time, whenever urgent problems have been discussed, officials of the Azerbaijan Railroad, the Azerineft State Concern, and the Sumgait Pipe Rolling Plant, Superphosphate Plant, and Aluminum Plant have sent us mere rank-and-file auditors, deputy shop chiefs, section chiefs, and so on; others have simply ignored our invitations. Now the situation is changing radically. The Milli Medzhlis has decided to give our Committee supra-departmental status in matters of environmental protection and control of natural resources. This means that officials of all ranks must be held legally responsible and specifically accountable for work that has been done in the field of ecology, with all the consequences ensuing therefrom. Now, at the direction of the Milli Medzhlis, we are preparing a new statute concerning the State Committee. In short, there is a lot to do.

[Imanov] *Arif Bey, the whole world is concerned about ecology today. The nations of the planet are worried about mankind's future. We have to admit, however, that the ordinary citizen of the former USSR, to put it frankly, is not yet fully ready to think about the global nature of the problem. And without this, it is hard even to talk about changes for the better in the ecological situation.*

[Mansurov] That's not all. A low level of ecological education and ignorance of elementary laws and principles can be encountered not only among people who have no relation to ecology but even among specialists who are directly involved with environmental protection—not to mention officials of various ranks. In the former Union, the place of ecological education was taken by political charlatanry, which we remember today as "Michurin-style genetics" and "the Lysenko regime," which resulted in absolute ecological ignorance. Changes are taking place along these lines today, but a state program is necessary, to include not only the training of ecology specialists but also the teaching of ecology as a subject in secondary schools, starting with the younger grades.

A major role must be played by the mass media—television, radio, and periodicals. Speaking of ecological education, let me say that the State Committee has drafted an "Integrated Plan of Work on the Ecological Upbringing of the Population and Broad Participation of the Public of Azerbaijan in Cleaning Up the Environment," which has been approved by the republic's directive authorities. We are also subsidizing the newspaper FARYAD and the journal AZERBAYDZHAN TEBIYETI and attempting to support these publications.

In conclusion let me say that in regards to ecology the ice seems to have been broken. Both governmental and civic organizations have turned to us; a Greens Party has been created in the republic; and there are civic movements to protect the environment. Before us lies a lot of crucial effort, work which will determine the future of our people.

[Imanov] *Thank you for the interview. I wish you every success in your difficult task.*

Malignant Anthrax Epidemic Kills 1 in Georgia

OW2107224192 Moscow INTERFAX in English 2014 GMT 21 Jul 92

[Following item transmitted via KYODO]

[Text] Twelve cases of malignant anthrax have been registered in Georgia. This was announced at the permanent representation of the republic in Moscow. Ten people were hospitalized in the health resort city of Tskhaltybo. One of them has died. The cities of Khobski and Telabski each have one victim.

According to a report from Georgia's representation in Moscow, the malignant anthrax epidemic will be debated Wednesday by the republic's government.

Uzbekistan's Ecological Crisis Viewed

92US0667C Tashkent PRAVDA VOSTOKA in Russian 6 Jun 92 p 2

[Article by R. Kulmatov, head of the Department of Ecology at the Republic of Uzbekistan Academy of Sciences Institute of Water Problems, doctor of chemical sciences, and R. Khalbayeva, senior scientific associate and candidate of technical sciences, under the title "Human Beings and the Biosphere": "The Environmental Barometer Is Rising"]

[Text] *Uzbekistan has inherited quite a few problems from the old system. The environmental problem is one of the most acute. It will long be felt as a result of extensive development of various sectors of the economy, particularly cotton farming.*

The environmental crisis is to a large extent responsible for the high infant mortality rate, and an increase in infectious diseases, cancer and other illnesses has also been observed in the republic. The true extent of environmental disaster in Uzbekistan has yet to be measured, but facts and trends have already been discovered that prompt justified public and civic concern.

Is there a way out of this situation? How can we increase the effectiveness of environmental and socio-environmental efforts?

One gets the impression that in many areas of ecology, environmental protection and rational use of natural resources our republic's scientists are losing ground, while writers and publicists often draw conclusions which are far removed from the truth without delving deeply into the problem. Frequent discussions, conferences and meetings are of no tangible benefit. Meanwhile the environmental situation is getting worse.

One of the main reasons for our environmental woes is thought to be waste, coupled with the persistent principle of no-cost use of natural resources. The extensive path of economic development is hampering widespread introduction of modern and efficient resource-conserving, low-waste and no-waste technologies. Economic incentives are not working, because managers have no stake in rational and economical use of natural resources. The flawed practice of wastefully expending too many raw materials, energy and processed materials per unit of finished production persists, increasing emissions, discharges and waste products resulting from production operations.

It will take substantial physical and financial resources to solve urgent ecological and environmental protection problems. Unfortunately, the republic has virtually no such resources, so therefore the most careful attention must be given to defining priorities for immediate and long-range environmental protection measures.

At the present time the environmental situation is worse in cities than in rural areas. The main culprits behind urban air pollution are motor vehicles and industrial enterprises. In the cities of Andizhan, Bukhara, Gulistan, Karshi, Kokand, Namangan, Nukus, Samarkand, Tashkent and Urgench motor vehicles are responsible for 70-90 percent of all harmful emissions. Developed countries have virtually solved the problem of how to utilize motor vehicle exhaust. This involves catalytic converters manufactured from precious metals. As a result such devices are relatively expensive and account for almost one-fourth of an automobile's price. We should also note that motor vehicles not only pollute the air, they are also a source of noise and vibration. In a modern city motor vehicles are responsible for up to 80 percent of all noise.

Industrial enterprises are another major source of air pollution, particularly facilities in the fuel and energy, natural gas, metals, chemical and building materials industries which use outdated technology. As a result even the installation of modern scrubbers and filtration equipment does not produce any effect, though this increases the cost of production many times over. That means that we must have a gradual transition to low-waste and no-waste technology which will permit us to eliminate the source of air pollution.

In view of the high concentration of major chemical and metallurgical plants in our republic we must limit the development of major enterprises and the construction of facilities whose operations pollute the environment. Further expansion of industrial centers is permissible only if low-waste and no-waste technologies are used. Currently enterprises are only extracting one or two components from minerals, i.e. using resources wastefully. This results in a tremendous quantity of wastes, discharge and tailings. At the Almalyk and Samarkand chemical plants alone over 60 million metric tons of phosphogypsum have accumulated. Furthermore, over 30 million cubic meters of household solid wastes are generated each year and hauled to dumps. Pollutants in those wastes are in a "mobile" state and can relatively easily be dissolved by precipitation or other water and thus enter surface water and ground water ecosystems.

Livestock farming also produces millions of metric tons of wastes that pollute surface water. Put briefly, the problem of waste utilization has become very urgent in nature. New areas of irrigated land have to be set aside for them and substantial amounts spent on hauling and storage. In the developed countries those wastes are used to produce materials and goods. Here, unfortunately, we have done little research on waste processing.

The environmental situation in the region is also negatively affected by the agro-industrial complex. Hopes for a substantial increase in crop yield through intensive use of agricultural chemicals have not been realized. In fact, over a period of approximately 20 years a huge quantity of toxic chemicals and chemical fertilizers have been introduced into the soil without even full information on their content of either pollutants or beneficial components. Analysis of the way pesticides are applied, for example, indicates that only one-tenth of them are beneficial, while the remainder pollute soil, water and

air, destroy the fauna and cause irreversible genetic changes in plants, human beings and animals.

Heedless importation of pesticides into the republic above standard limits has resulted in a situation in which warehouses belonging to the Uzselkhozkhimiya [Uzbekistan Agriculture Chemicals] Association currently house over 12,000 metric tons of poisonous chemicals, use of which is banned. Their expiration dates are long past, and they are being stored in unsuitable structures.

Nowhere in the world do there exist technologies for cleansing soils of pollutants. We feel that it is time to finally begin the task of inventorying and cataloguing soil content on cotton farms, especially at former agriculture airstrips, to determine whether toxic chemicals, heavy metals and biological components are present. We must draw maps showing concentrations of polluting and beneficial components in irrigated soils. In other countries every farmer has maps like that, allowing him to grow environmentally pure produce.

The primarily economic nature of environmental protection must give way to social goals intended to ensure the health of human beings, their surroundings and their homes. A solution to the problems of ecology and environmental protection are closely linked with the development and application of modern, efficient scientific advances and with the training of highly-skilled specialists. Furthermore, we must coordinate the operations of many collectives in the Central Asian states and Kazakhstan.

In Uzbekistan research and development work in connection with ecology is being conducted piecemeal by many academic and industry-based scientific research institutes and higher educational institutions. We must coordinate that work. We need a research institute to deal with fundamental regional ecological problems which is capable of serving as the central institute in that field.

In this republic there is not a single higher educational institution or department which is currently training ecologists with a broad range of skills for work at research institutes, higher educational institutions and major commercial enterprises or in the new governmental organs, the khokimiyati [local councils]. We must set up training for ecologists in various areas of science, technology and the economy, in particular economist-ecologists, engineer-ecologists, agronomist-ecologists, land development specialist-ecologists and educator-ecologists. Some of those specialists could be trained in the CIS countries or abroad.

In order to set in motion the entire mechanism of these and other proposals designed to improve the environmental situation, we must hurry to pass environmental protection legislation and programs for Uzbekistan for the period up to the year 2005 and prepare a comprehensive regional program for environmental protection and rational use of the region's natural resources in conjunction with the other Central Asian republics and Kazakhstan. We feel that the republic ecology and health fund that has now been established will help achieve those goals.

Status of Vozrozhdeniye Island Biological Lab Remains Unclear

92WN0660A Moscow NEZAVISIMAYA GAZETA in Russian 1 Jul 92 p 6

[Letter to NEZAVISIMAYA GAZETA from Damir Safulin: "Will the Secret Laboratory Not Move From Kazakhstan to Russia? The Bacteriological 'Sand Dune' on Vozrozhdeniye Island Continues To Alarm the Public"]

[Text] I read in your newspaper for 23 June 1992 an article by Sergey Kozlov which discussed the bacteriological laboratory on Vozrozhdeniye Island in the Aral Sea. The article is entitled "Scientists Have Abandoned Secret Laboratory." It says there: "The doors and windows of the residential buildings, barracks, and the laboratory facility itself have been boarded up since last year."

My son, Vladimir Safulin, who was recruited into the army in June 1991, requested to serve precisely in Aralsk-5 and on this very Vozrozhdeniye Island, which in the unit (military unit 25484-R, which is part of a larger unit located in the city of Aralsk-5) and in the Russian General Staff is called the "Sand Dune." Quartered on the island last year was a whole regiment, in which my son, the commander of a unit of 54 men, served.

After a great deal of difficulty he and his subordinates were ultimately transferred to Moscow. In order to accomplish this, we—a group of parents—had to push our way through to get a meeting with General Shukalin in the General Staff. What caused the parents to demand a transfer to Russia was something traditional for our army—hazing and the increasingly frequent cases of beating up on military servicemen (even officers) by the local population. My son's division was transferred to Moscow on 26 April 1991.

And so military servicemen were still quartered on the "Sand Dune" at the end of April. To be fair, one must say that by that time there was really no civilian population there.

S. Kozlov's article quotes the words of Mukhtar Shakhanov, president of the "Aral-Asia-Kazakhstan" international committee: "The laboratory on the island is still operating." The statement was made in January 1992. I assume that my information about the "boarded-up" barracks would make one think that Shakhanov was right. Apparently the laboratory was "mothballed" in approximately the same way as the barracks were "boarded up." This assumption is reinforced by the fact that, as was stated in the article, beginning in 1992 scientific research work will be conducted on the island

by the duty-shift method. This in a supposedly mothballed laboratory! Another quote: "In November 1991 at a scientific conference in Sergiyev Posad a decision was adopted to finally terminate testing work on the island."

Has it never occurred to the readers of the article what kind of relationship the Moscow-area Sergiyev Posad (the former Zagorsk) has to the Aral? The most direct. The fact is that Sergiyev Posad is where the command of the military unit quartered in Aralsk-5 is located. And when they set out for Moscow the entire division was offered a chance to continue their service in Sergiyev Posad, but the boys refused.

But that is not the main thing. The main theme of the article was that the bacteriological testing ground is closed because of public protests. Is that true? As I went through the various levels of authority asking for my son and his men to be transferred out of Kazakhstan (a different country) to serve in Russia, I made my way to the Committee on Affairs of Military Servicemen under the president of Russia, where I was told plainly that the Russian higher military echelons had adopted a decision to transfer all Russian units out of the territories of the former Union republics.

Moreover, the entire Aralsk-5 unit was gradually transferred to Russia, since Kazakhstan is creating its own army. Consequently, the closure of the "Sand Dune" is in no way linked to public protests.

God forbid if along with the unit they were to move the sinister "Sand Dune" with its "mothballed" laboratory to the territory of Russia.

DENMARK

Environment Minister's Initiative on Natural Forests Applauded

92WN0639A Copenhagen BERLINGSKE TIDENDE in Danish 29 Jun 92 pp I-10

[Guest commentary by Svend Bichel of the Danish Nature Conservancy Association: "Minister of the Environment's Plans for Danish Natural Forests"]

[Text] Before the United Nations world conference in Rio, the minister of the environment put forth a proposal for a new comprehensive plan to preserve the natural forests of Denmark. The proposal is a historic step in nature conservancy. In contrast to our lakes, streams, waterways, moors, coastal wetlands, and fringe areas, natural forests are not protected in Denmark.

We must now await the final policy, presently under discussion by the government.

At the UN world conference—as earlier in the European Council and the IUCN [International Union for Conservation of Nature and Natural Resources]—initiatives to preserve natural forests were sought. Nearly all of the nations committed to the convention on protection of animals and plants and to Agenda 21, which deals, among other things, with natural forests. There is good reason to laud the Danish effort, which was instrumental in reaching this result. As Denmark's follow-up to this conference, the minister of environment's policy on Danish natural forests would make an important contribution.

Approximately 12 percent of the area of Denmark is covered by forest, but most of it was planted by man. Only 1 square meter for every 100 square meters of forest is old forest. The original virgin forest no longer exists in Denmark. We can never regenerate the original forest, but by setting aside large tracts of forest for free development, we can eventually retrieve much of the virgin forest's natural richness.

In these forest areas, a rich bird habitat, many different insect species, large old and hollow trees, natural wetlands and much else could produce wonderful expressions of nature. It would be an important study area for scientific research. And above all, the areas would make an important contribution to preserving many of the animal and plant species threatened today.

The few remnants of the natural forest found within the Danish forestlands are typically so small that many animals and plant species are in danger of disappearing. The biologists feel that every time a remnant of the natural forest is cut down, a species also disappears from the Danish landscape.

In the most recent issue of its newsletter, NATUR OG MILJO, the Danish Nature Conservancy Association proposed that the minister of the environment shape a natural forest policy for the entire nation, incorporating the following main features:

- All of the existing remnants of old forest should be protected.
- There should be 30 large contiguous forest areas, evenly distributed throughout the entire country, set aside for natural forests. Within these regions, a virgin type of forest should be developed with free water movement, trees of all ages intermixed, dead trees, natual animal and plant life etc.
- In all, about 10 percent of the Danish forested area should be set aside as natural forest for free development, grazing woods, or other beneficial forms of nature.

For the sake of natural development, it is essential that the designated contiguous areas have a reasonable size. The Danish Nature Conservancy suggests 300 hectares [about 750 acres] or more. That would mean that the 30 areas altogether would cover at least 100 square kilometers, which is less than 0.5 percent of Denmark's total area. With the good will of the Rio conference fresh in our memory, this hardly seems too much to set aside for preservation and partial regeneration of Denmark's original forest, which once covered 90 percent of the country.

For many threatened plant and animal species, the realization of an effective policy for the Danish forests assures survival and an improved habitat. And we humans will be richer for the enhanced enjoyment of the Danish forests. Added to this, an effective policy would contribute to our credibility abroad and demonstrate our ability to follow through. This could be particularly relevant in the case of nations whose forest protection policy is potentially of crucial importance over the short term for the protection of the earth's multiplicity of plants and animals, and for ecological balance.

There are good reasons for the government and the Folketing to support the minister of the environment's initiative.

FINLAND

Finland's Climate Expected To Grow Warmer

92WN0614B Helsinki HELSINGIN SANOMAT in Finnish 20 May 92 p A10

[Article by Jukka Perttu: "SILMU's New Estimate of Temperature Rise: Finnish Climate Will Grow Steadily Warmer Throughout Year"]

[Text] Finland's climate is expected to grow steadily warmer throughout the year. It was earlier believed that the climatic change due to so-called greenhouse gases (methane, nitrous oxide, carbon dioxide, and chlorofluorocarbons) would occur mostly in winter. The new estimate was submitted in an interim report by SILMU (Finnish Climatic Change Research Project).

The best estimate is that Finland's temperature will rise 1.2 degrees by the year 2020 and 4.4 degrees by 2100. The increase will be the same in Lapland and southern Finland.

"The last five mild winters still do not prove that the climate has warmed up. During those years, Finland was affected by warm currents from the Atlantic. It has been warm in Finland, but in Turkey, western Greenland, and the Middle East, for example, it has been cold," said Eero Holopainen, professor of meteorology.

Climatic change is predicted with complex mathematical models, and estimates are therefore very rough. According to Holopainen, however, the scientific community is unusually unanimous in its view that additional greenhouse gases will boost temperatures.

Millions of Environmental Refugees

According to the SILMU report, Finland's growing season will lengthen, which means more grain output and forest gain, although new types of noxious insects and plant diseases may invade the country.

The most likely rise in sea level is thought to be 20 centimeters over the next 100 years. On the Finnish coast, however, the land will annually rise, least in Hamina (1.7 millimeters) and most in Pietarsaari (8 millimeters).

According to mathematical models, sea level could rise as much as 1 meter in 100 years. On the other hand, a drop of 20 centimeters is also possible.

"The effect of climatic change on the world's economy, water resources, food production, and political status may be more significant to Finnish society than the change itself in Finland's climate," says the SILMU report.

For example, if drought spawned by climatic change turns a hundred million Africans into environmental refugees, the effect will also be felt in Finland.

According to Finnish researchers, atmospheric carbon increases by 3 billion tons a year due to the destruction of forests and the use of fossil fuels.

The increase would be much greater, but some of the carbon binds to the sea and forms deposits on the seafloor.

According to calculations, 1.5 billion tons of carbon disappear annually from the atmosphere. Most of it is thought to bind to forests of the northern hemisphere.

Abundant nitrogen fallout has raised timber growth, and forest litter that binds carbon also builds up rapidly.

Large Number of Birds, Seals Found Dead in Gulf of Finland

92WN0614A Helsinki HELSINGIN SANOMAT in Finnish 11 Jun 92 p A5

[Article by Riitta Vainio: "Coast Guard Gathers Dead Birds Daily From Gulf of Finland; Strange Destruction of Birds Off Kotka Has Gone on for Two Months; Unclear Parceling of Assignments Hinders Explanation and Spread of Information"]

[Text] An investigation into the reason large numbers of birds have died over the last two months in the Gulf of Finland has not begun because it is unclear which authority bears responsibility for the probe.

The Coast Guard gathers dead birds daily from the outermost islands off Kotka.

Poison is thought to be the reason for the bird deaths. Tuesday evening the Coast Guard collected samples of suspected poison and delivered them to the Porvoo Museum of Natural History.

The National Board of Waterways and Environment has been asked to take charge of the investigation. The State Institute of Veterinary Medicine is responsible for examining dead animals, but the only scientist familiar with the issue has gone on vacation and announced that he will return in late June to begin the inquiry. According to the institute, no other scientist deals with the topic.

National Board of Waterways and Environment representative Lea Kauppi said Wednesday [10 June] that unless she gets hold of the Veterinary Medicine Institute scientist soon, the National Board of Waterways and Environment cannot take charge of the case.

Birds have been dying in the eastern Gulf of Finland since early April, according to the National Board of Waterways and Environment, which addressed the issue for the first time last Friday.

No One's Job To Handle Poison-Related Accidents

"The Ministry of Environmental Affairs wants to know what killed the birds. If it is some virus, it may go unexplained. If it is some poison, we have to figure out where it came from," said bureau chief Kauppi.

"In a situation like this, Finland has no set protocol to follow. If a poison-related accident occurs, it is really no one's job to handle it." This prevents the case from being handled sensibly, according to Kauppi.

Kaj Barlund, director of the National Board of Waterways and Environment, admits that elucidation of the reason birds are dying is now incomplete and unsystematic because the National Board of Waterways and Environment plays no official coordinating role. The Ministry of Environmental Affairs has separately asked for an analysis of the case.

Knowledge of Possible Poison Discharge Mires in Office

Knowledge of the case became bogged down in bureaucracy. Juhani Tammisto, maritime inspector at Kotka's regional office for the Gulf of Finland maritime district, said he issued a bulletin to the National Board of Navigation and National Board of Waterways and Environment concerning a Belgian chemical vessel that emptied its tank into the sea on 20 April somewhere between Skoldvik and Kotka. It is possible the vessel discharged styrene into the sea, according to Tammisto.

The National Board of Navigation is investigating the case as a possible violation of international maritime agreements.

National Board of Waterways and Environment director Kaj Barlund did not hear about the maritime district bulletin concerning a poison discharge.

Nor did the National Board of Waterways and Environment send word of the Belgian ship's discharge to the environmental division of the Kymi County Administrative Board. Bureau chief Jarmo Louvo says that he should have been given official word of the case because he would have had to decide whether to take samples.

According to Ilppo Kettunen, chief of research for Kymi's waterways and environmental district, samples of water and plankton have been taken because of the bird deaths. Samples were taken on 5 June south of Itakari outside Kotka. The plankton was sent to the National Board of Waterways and Environment laboratory where it was found to contain pollen and brown algae. According to Finnish sources, brown algae do not form poisonous compounds and thus could not cause the bird deaths.

The water samples were not analyzed. Instead they were quick-frozen to await later analysis, because the water district does not know what to look for. The water district will take fresh samples next week.

In Addition to Birds, More Seals Than Usual Also Dying

Aquatic birds, at this moment mostly terns, continue to die daily off the Kotka coast. Most of the birds have perished on the islands of Luppi, Askeri, Koivuluoto, and Vanhankylanmaa. The islands are located within Finland's territorial waters. Earlier in May hundreds of dead razorbills and guillemots were found near Virolahti and on the Pernaja islands off Porvoo.

Raimo Luoma, curator of the Porvoo Museum of Natural History, thinks the situation in the eastern Gulf of Finland is serious. Birds have been dying there since early winter.

An exceptionally large number of seals, 30 thus far, has also been found dead since winter in the eastern Gulf of Finland. They did not drown but died some other way. It is difficult to determine the cause of death, according to Luoma, because the animals were badly decayed.

In recent days, fishermen have also reported seeing a lot of dead herring in the sea.

The most serious situation is on the Kotka archipelago where 300 dead terns were found within a radius of 16 kilometers. According to Luoma, 10-15 birds still die daily.

The birds exhibited diarrhea and muscular degeneration, which suggest poisoning, according to Luoma.

A week and a half ago, according to Borje Andersson, who has fished off the coast of Loviisa for 40 years, a milky, yellowish substance that soiled traps was floating on the sea. "First thing in the morning, there was just a little of it, but by evening the entire net was covered."

The same substance is thought to have drifted onto the avian islands off Kotka.

GERMANY

Bacteria Used in Cleanup of Seveso Poison

92WN0638A Munich SUEDDEUTSCHE ZEITUNG in German 25 Jun 92 p 45

[Article by Peter Spork: "Bacteria in the Fight Against the Seveso Poison: Dioxin-Reducing Microorganisms Could Help To Detoxify Contaminated Waste Dumps"]

[Text] Since 10 July 1976, when the chemical plant near Seveso [in northern Italy] exploded, scarcely any chemical has caused as much of a fuss as the 2.3.7.8-tetrachloride-benzoparadioxin, the most toxic among the 75 known dioxins. When this toxic substance was released at that time, countless birds and small animals died. Almost 200 people became ill and more than 700 people had to be evacuated.

Poisonous Athletic Grounds

The highly toxic sustance arises as a waste product in the manufacture of plant protectives and other chemicals and also in the burning of garbage. It was therefore not surprising that after the Seveso catastrophe there were reports of dioxin contamination in German territory as well. Many garbage dumps and residential areas and numerous athletic grounds have been in the headlines since then, because the poison was found there.

Nature has long since adapted to toxic substances that have long existed there in large quantities—they include tannic acids and ammonia, for example. A "defense" has developed in the course of evolution, for example in the form of fungi and bacteria that attack the harmful substances and break them down. The Seveso poison, on the other hand, is an artificial product of this century. No microorganism has been able in that short time to

specialize in its breakdown. For this reason, soils contaminated with dioxins must repeatedly be removed and kept away from people at waste dumps.

At the Universy of Hamburg, two research teams under the microbiologist Peter Fortnagel and the chemist Wittko Francke together with scientists in Bielefeld, Braunschweig, and Greifswald and in cooperation with the Hamburg NATEC Institute for Scientific-Technical Services GmbH have been trying for several years to "help evolution out" and to culture bacteria that can break down dioxin in the soil and waters.

The microbiologists began with a soil sample to which they added dibenzofuran, a nontoxic substance similar to dioxin. Some microorganisms of the common genus Pseudomonas in this sample survived the unusual conditions. They accepted the strange "food source" and thrived wonderfully. With the help of a special enzyme, dioxygenase, the bacteria split the dioxin-like substance. They link an oxygen molecule to the dibenzofuran, which thereby disintegrates into unstable intermediate products. The bacteria obtain their energy from the further breakdown of these substances.

Meanwhile, the microbiologists have cultured more and more new variants of Pseudomonas and taken many different soil samples. The new cultures are also tested for their capacity to break down less toxic dioxins and dioxin-like substances. The chemists thereby manufacture the test substances and investigate the metabolic products of the one-celled organisms. "The analysis of the decomposition products should ensure that they are not likewise toxic, for only then is a detoxification proven," stresses Heinz Wilkes, the chemist responsible for the analysis.

The Seveso poison, together with 11 other related substances, form the "dirty dozen" [preceding term published in English]—a group of the most toxic substances known. The toxins with the same basic chemical structure differ primarily in the arrangement and number of some chlorine atoms attached to the carbohydrates. Once taken up by the organism, they react with the body's own proteins and with the nucleic acids of the hereditary substance. In this way they can destroy important organic structures and not least promote the rise of cancerous diseases.

It is not yet clear whether the bacteria can actually cope with the "dirty dozen." The substances are too toxic for experiments in traditionally equipped laboratories. A safety laboratory is needed to deal with the highly toxic materials. But although the Federal Research Ministry has given the green light, difficulties with the search for the site and financial problems are delaying the construction of such a laboratory.

Only when the safety laboratory is ready can one determine whether the microorganisms with the unusual appetites can really do what they promise and break down highly toxic dioxins. Because of their similarity to the substances tested so far, however, Francke assumes that the bacteria can break down the "dirty dozen" as well. Above all the "decomposition products will be less toxic than the initial substance by powers of ten," Francke surmises, and adds, "if anything remains at all." In the ideal case, the voracious enemies would completely break the dioxin down into carbon dioxide, hydrogen, and chloride.

In the event that the bacteria are actually able to do this, the first plans for a practical application are already on the table. Smaller quantities of contaminated soil could be detoxified in a "solid phase." For this one would have to remove the soil and mix it with the bacteria. They would then multiply and with occasional turning eat their way through the substratum. A similar process is already being practiced in the decontamination of oil-saturated soils.

The researchers have thought of something entirely different for the decontamination of entire waste dumps. The catchment water of a contaminated waste dump could be pumped off to then free it of the dioxin—which first must be dissolved through nontoxic additives in the water—with the help of bacteria as in a biological sewage treatment plant. The treated water is then to be flushed back and could wash new dioxin out of the garbage heap. Francke speaks in this connection of a "kidney for Georgswerder," the infamous dump in the southern part of Hamburg.

Test in the Safety Laboratory

But that is not enough: Under the plans of Juergen Voss, likewise a chemist at the University of Hamburg, the "kidney" could be extended so as to produce a multistage sewage treatment system. Voss and his team are testing a method that "strips" the chlorine atoms from the dioxins. In this so-called electrode chlorination, just as in an electrolysis, current is used to break down a substance. In this way, less toxic dioxins can already be reduced to their chlorine-free basic structure, which bacteria can decompose. But this procedure must also be tested first with highly toxic dioxins in a safety laboratory. If it proves itself, it will later be placed at the head of the practice of the biological decomposition of dioxin, thereby achieving an optimum purfication effect.

NORWAY

Businessman Attempts To Sell Russian Heavy Water

LD2607160292 Oslo Radio Norway International in English 1300 GMT 26 Jul 92

[Text] A Norwegian businessman in the far northern town of Tromso has been contacting a number of foreign embassies in Oslo with offers to sell them heavy water from Russia. Tromso is a near-neighbor to Russia's Kola Peninsula, which has one of the world's biggest concentrations of nuclear weapons. Legally, the businessman

was within his rights. His offers were made in January—a law forbidding such sales was not made until February.

SPAIN

Ecologists Cite Government Environmental Protection Failures

92WN0655A Madrid TIEMPO in Spanish
15 Jun 92 pp 176-181

[Article by Sebastian Moreno: "Spanish Ecologists Accuse Government of Pretending To Be 'Green'"]

[Text] *Spain, which at the Earth Summit in Rio de Janeiro is playing the part of a well-developed power, suffers at home from some of the most important problems being debated in the effort to save the planet: large desertified areas, overexploitation of natural resources, and huge amounts of toxic waste....*

Spain has greater biodiversity than any other country in Europe, with native species of animals and plants found nowhere else in the world, but it is also the European country with the largest area destroyed by fire—an average of 250,000 hectares burnt every year. What is lacking are a well-established environmentalist culture, an adequate forest policy, and preventive measures, according to experts.

The consequences are very real: more than a million tons of soil lost each year to erosion, particularly in parts of the neighboring provinces of Almeria, Murcia, Alicante, and Valencia, which constitute the only typically African desert on the European continent.

The threat of erosion is high in three-fourths of the nation's territory as a result of inadequate agricultural practices—intensive cultivation, the misuse of pesticides, the overexploitation of subterranean water—which have irreversibly damaged areas such as the Daimiel Tables National Park, long one of the country's most important aquatic areas and now a desert. "Daimiel shows what may happen a few years from now to Donana Park, the richest natural reserve in Europe, if aquifers in the area continue to be exploited," insists Ramon Llamas, professor of geology at Alcala de Henares University, which has made a hydrogeological study of Donana. All this, even though it is President Felipe Gonzalez's favorite vacation site.

Humberto da Cruz of Friends of the Earth deplores Spanish laws—worse than anachronistic, in his view—which permit drainage for unsound public health reasons and which have caused the disappearance of more than half of Spain's wetlands since the turn of the century. Particularly shameful examples are Antela (Orense), La Nava (Palencia), La Janda (Cadiz), El Calderon, and Rui Sanchez (Sevilla), as well as the drastic reduction of the Daimiel Tables, the drying-up of the Ruidera lagoons and parts of the Valencia lagoon.

But it is not just wetlands that are in danger. Of the 50 animal species native only to Spain, at least 20 are in imminent danger of extinction, including the Iberian lynx, of which 500 pairs are all that remain: over time, they are becoming increasingly dispersed and exposed to the rapacity of hunters. Other animals living in our territory and in serious danger of extinction are the monk seal, the imperial eagle, and the Pirineo goat.

Environmental Problems

There are somewhere in the neighborhood of 50 endemic plant species in danger of extinction. In the Canary Islands alone, 75 percent of such plant species may be snuffed out.

Notwithstanding the proactive position of the Spanish Government at the Earth Summit now under way in Rio de Janeiro—Madrid will allot 1,400 million pesetas in three years to support sustainable development in the Third World—major ecological organizations are doing some serious thinking about environmental problems back home: massive contamination of soils, rivers, and coasts; progressive erosion and desertification of extensive areas; and the constant threat of extinction of important species of flora and fauna.

According to Jose Antonio Pascual Trillo, president of the proecology organization Friends of the Earth, the roots of the problem are the scant weight the administration gives to environmental considerations and the absence of a coherent policy on these issues.

"In addition," says Pascual Trillo, "there is strong speculative pressure on the media, ignorance of regulations on the part of enterprises, ineffective enforcement, and so forth. Also, this is a country with high but unbalanced levels of industrialization and with a tourism sector that is up a blind alley and is utterly ravaging our littoral."

Friends of the Earth denounces the lack of controls on emissions and waste-dumping in rivers, noting worrisome levels of pollution along stretches of the Tajo, Guadiana, Guadalquivir, Ebro, and Llobregat, some of which are already lifeless.

Toxic Waste

Maria Luisa Toribio of Greenpeace criticizes the official position on the elimination of toxic waste generated in Spain by industry: more than 2 million tons per year. "One-fourth of this toxic waste comes from the paper industry, where, owing to the use of chlorine, organic chlorine compounds are forming that are dumped into the rivers and the sea. Huelva's unbreathable environment is a good example. At the same time, there is an oxygen-based bleaching process that avoids all of these dangers of pollution. If only it were used!"

According to Greenpeace, "The Spanish Government, instead of promoting new production processes, claims to be solving the waste problem by building dumping

sites and costly incinerators that only generate additional toxic compounds such as dioxins and transfer the pollution to the atmosphere."

Spain's Role

Recently, Greenpeace paralyzed the Tarragona incinerating plant in a nonviolent direct action. Community funds are promoting a policy that is already having repercussions in Spain. In Almaden (Ciudad Real), where more than 10,000 tons of toxic waste from other countries are buried, plans to build one of the biggest incinerators in Europe have spurred more than a little protest in the area. Currently in Spain, there are plans to build more than 40 urban waste incineration plants, many to be financed with Community funds.

The position taken by Spain on one of the most important issues at the Earth Conference—the effect of planetwide gaseous emissions on global warming—is deplored by the ecology organizations. While the European Community is proposing, by the year 2000, to stabilize CO_2 (carbon dioxide) atmospheric emissions at the 1990 level, the Spanish Government wants to increase our country's emissions by 25 percent in the same period, claiming the right to pollute more until we reach the development level of countries in northern Europe.

In contrast, naturalists and ecologists all over the world are urging the industrialized countries to reduce their per capita carbon dioxide emissions by 20 percent by the year 2000, and by 75 percent by the year 2030, in order to stabilize atmospheric concentrations of CO_2 and mitigate global warming.

Ostrich Policy

Spain, considered one of the world's 10 most nuclearized countries, also seems to practice an ostrich policy in the area of radioactive waste management. Uranium mining alone has generated 53 million tons of waste, and, by the year 2019, it will have produced 434 million tons, according to the Third General Plan for Radioactive Waste.

"In addition to the waste produced by mining," says Carlos Bravo of Greenpeace, "waste is produced in uranium fuel factories (Juzbado, Salamanca) and, above all, in nuclear reactors."

According to Bravo, "Instead of ending its production of waste in order not to aggravate an already serious situation, Spain is trying to hide it underground in geological formations whose stability no one can guarantee over such large time spans."

In the opinion of Xavier Pastor, Greenpeace's top official in Spain, our government is basing its development activity on the massive use of nonrenewable resources—raw materials, energy sources, and water—the pillaging of natural resources, the generation of enormous quantities of waste, and pollution-generating systems for obtaining energy and industrial production.

"Worst of all, it defends the necessity of increasing carbon dioxide emissions at a time when everyone else is facing up to the urgent necessity of reducing them. Likewise, the Spanish Government is unfortunately helping to turn the Earth Summit into a pathetic attempt by governments and enterprises to convince world opinion of their environmental concern and to posture as the great defenders of the planet's well-being."

He and other distinguished naturalists and scientists point out the danger that the Rio summit may degenerate into a Greens' "Carnival."

TURKEY

Commentary Views Turkish Leader's Remarks on River Rights

LD2907013992 Algiers Voice of Palestine in Arabic 1702 GMT 28 Jul 92

[Excerpts] Brothers, on the eve of the celebrations to mark the Ataturk Dam and making the turbines operational in the presence of the leaders of many countries at the inauguration of that colossal project, Turkish Prime Minister Suleyman Demirel has claimed that the development and growth of any Middle Eastern country would please all the peoples of that region, including the Muslim state of Turkey. However, in this case Syria and Iraq have suffered as a result of that dam's construction; Turkey refuses to recognize the rights of the two Arab countries to the waters of the Euphrates and the Tigris. Demirel's statement at a news conference on the day the dam was inaugurated added to the complications. He said that Iraq and Syria have no right to demand the waters of the two Turkish rivers; Turkey does not similarly demand their oil. Demirel's logic is strange and bewildering. It would be similar to a situation where Sudan or Ethiopia would tell Egypt that it had no right to the waters of the Nile. [passage omitted: International conventions stipulate rights in the distribution of water]

It is strange that Demirel should link river water and Arab oil. Demirel's statement suggests that if Iraq and Syria had rights to the waters of the Euphrates and Tigris, Turkey had a right to Arab oil. On the basis of that logic he boastfully demands to barter oil for water. We must not express bewilderment and amazement at the Turkish stance. Demirel and the Turkish leadership are aware of the extent of the weakness of the Arab nation, and the split and rift that are decaying the Arab body. Arabs should have learned by now that in this world rights would be squandered unless there was a force to protect and defend those rights. In their present circumstance—of weakness, schism, and the covetous ambitions of several states regarding the territories and resources of this nation and the peoples that are down trodden with poverty and shaky convictions—Arabs are

not capable of bearing the responsibility for combating these ambitions. Israel on one side, Turkey on another, and Iran yet on another; all have territorial ambitions in the region, and they are aware of the extent of the differences and rifts between any two Arab countries. Therefore, they are pushing the region in an opposite direction to Arab interest and the future of Arab peoples from the [Atlantic] Ocean to the Gulf.

The question which is being asked by every sincere Arab is how would our nation be able to get rid of these circumstances. We will not be able to bring about the necessary change unless there is will and determination. Arabs are supposed to regain their senses and establish a unified Arab force capable of defending Arab interests and Arab destiny. Life does not wait for anyone. If someone stops engaging in struggle, his enemies will pounce on him. If Arabs do not wake up, the day will come when the enemies will blow them up.

Official Arab apathy has reached an extent that has made a state like Turkey deride Arab rights. Pan-Arab security must be organized one way of another; this is the only way to stop the bleeding in our body, in our mind, and in every point of our existence. Only then will the world treat us seriously and take us into account.

UNITED KINGDOM

Vehicle Fumes Above EC Target Safety Levels

92WN0609A London THE DAILY TELEGRAPH in English 16 May 92 p 2

[Article by Toby Moore, Environment Correspondent: "Car Fumes in Most Cities a Health Threat"]

[Excerpt] Nearly 19 million people breathe vehicle fumes in amounts above EC target safety levels, according to a study by the Government Warren Spring Laboratory published yesterday.

Findings from 363 monitoring sites in most major towns and cities showed that amounts of nitrogen dioxide, caused by emissions from vehicle exhausts, rose across the country by 35 percent between 1986 and 1991.

Dr Malcolm Green, chairman of the British Lung Foundation and a London chest consultant, said the analysis was worrying and the continuing trend in air pollution would aggravate breathing problems.

"There is now good evidence that asthma is increasing in this country and one of the factors implicated is air pollution," he said.

The EC sets a guidance limit of 26 parts per billion of nitrogen dioxide in the atmosphere and a maximum level of 40 parts per billion.

Warren Spring found that 8.5 million people were living in areas where monitors showed emissions exceeded 30 parts per billion.

The 40 parts per billion limit was breached at 12 sites, 11 in London and one in Sheffield, between July and December last year, according to analysis of data from the six-month programme.

During the thick smog in the capital last December, when asthmatics were advised to stay indoors and lollipop ladies wore smog masks, levels as high as 483 parts per billion were recorded.

Mr David Maclean, Environment Minister, said better public transport, efforts to cut congestion and emission targets for new cars would ease the problem in future. [passage omitted]

Climate Change Said Less Severe Than Forecast

92WN0608A London THE DAILY TELEGRAPH in English 28 May 92 p 4

[Article by Roger Highfield, Science Editor: "Greenhouse Warming 'Less Than Forecast'"]

[Text] Climate change caused by pollution will be less severe than previously thought, although the rate of change could be five times faster than in the last century and could present "a considerable challenge to humanity".

New estimates, published today in Nature by Professor Tom Wigley and Doctor Sarah Raper, of the climatic research unit at the University of East Anglia, are based on a recent revision of the greenhouse gas emission scenarios first published in 1990 by the United Nations intergovernmental panel on climate change.

The new predictions of man-made climate change "are noticeably less than corresponding predictions made previously by the panel in 1990" said the team.

"However, they are still far greater than anything experienced over the last 5,000 years at least."

Emissions of greenhouse gases between 1990 and 2100 have been amended to take into account new information on feedback effects, the way carbon dioxide is absorbed by the biosphere and cooling effects, notably caused by ozone depletion and sulphate aerosols that reflect sunlight.

In Nature, the team gives predictions of future global mean temperature and sea level change based on the revised emissions.

They calculate the change in global mean temperature that would occur if the carbon dioxide concentration in the atmosphere doubled is 2.5 degrees Celsius with a global sea level rise of 19 inches over 1990-2000.

The changes correspond to an average warming rate of more than 0.2C per decade, about five times the average over the past 100 years and about four times the rate of sea level rise in the 20th century.

—A method to dispose of carbon dioxide, the principal greenhouse gas, by injecting it underwater is discussed in Nature by a team from the Nansen Environmental and Remote Sensing Centre. It concludes that this could offer a way to ease global warming.

Pollution Inspectorate Bans Power Station Fuel

92WN0610A London THE DAILY TELEGRAPH in English 29 May 92 p 1

[Article by Charles Clover, Environment Editor: "Acid Rain Ban for Power Station Fuel"]

[Text] In an historic decision, the Pollution Inspectorate has told National Power it cannot burn a new bitumen-based fuel in a South Wales power station because of the huge amount of damaging acid rain it would cause.

It is the first time in Britain that a power station proposal has been rejected on the grounds that it contains no measures to tackle the emission of acid rain.

The decision is the first of its kind under the 1989 Environment Protection Act and comes after the first full environmental assessment of a power station's potential ecological damage.

It is seen by the industry as a test case, because it affects plans by National Power and PowerGen to burn the new fuel in power stations all over the country.

Orimulsion is a bitumen-based fuel extracted from the tar sands of Venezuela. It is seen by BP Bitor, a joint venture between BP and Venezuela, as potentially taking over up to 50 percent of the coal market, and BP Bitor is offering orimulsion at prices which undercut coal.

Burning orimulsion at Pembroke would have deposited 203,000 tons a year of sulphur upon the already heavily-acidified rivers, national parks and protected wildlife areas of mid and south Wales.

The Government's statutory wildlife body in the principality, the Countryside Council for Wales, said the orimulsion plant would increase acid rain at a time when the Government planned to cut acid rain nationally by 2005. More than half of Wales receives acid rain from power stations above what the ecology can stand, says the council.

Trout are extinct in the headwaters of the Severn, and other rivers that rise in Wales, including the Usk, Dee and Wye, are badly affected. Dippers, a native bird of upland streams, have declined by 80 percent.

The council calculated that burning orimulsion would increase present emission levels from the Pembroke plant by up to 13 times.

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2

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